

No. 730

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING

TRANSFERRED TO  
L. S. SYSTEM

Report No. 677 No. in Register Book 1207

S.S. "Heyport"

Makers of Engines North Eastern Marine Eng Co

Works No. 1899

Makers of Main Boilers North Eastern Marine Eng Co

Works No. 1899

Makers of Donkey Boiler ✓

Works No. ✓

MACHINERY.

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No.

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. \_\_\_\_\_ No. in Register Book \_\_\_\_\_

Received at Head Office

18 June 1909

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

Port of Registry

*Newcastle*

Registered Owners

*Keystone Transportation Co  
of Canada Ltd, Montreal.*

Surveyor's District

Date of Completion of Engines

*5-09*

" "

" Main Boilers

*5-09*

" "

" Donkey "

*✓*

Trial Run at

*Whitley Bay*

Date

*18-5-09*

First Visit

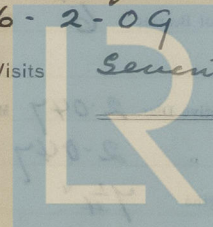
*26-2-09*

Last Visit

*17-5-09*

Total Number of Visits

*Seventeen*



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## ENGINES.

Made by *The North Eastern Marine Eng Co Ltd*  
 " at *Wallsend* Works No. *1899*  
 Description *Direct-acting triple exp. S.C. 3 cranks*  
 No. of Cylinders, each Engine *3* Diars. *15-24-42* Stroke *30*  
 Cub. feet in each L.P. Cylr. *23.3* Revols. per Min. *48* L.H.P. *598*  
 Pressure in I.P. Receiver at full Power *65 lbs* 2nd I.P. ☒ L.P. *10 lbs*  
 Thickness of Metal in H. P. Cylr. *1"* I.P. *1 1/8"* " ☒ " *1 1/8"*  
 " " " " Liner *1"* " ☒ " ☒ " *1"*  
 " " " " Valve Chest *7/8"* " *7/8"* " ☒ " *7/8"*  
 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 *18* I.P. *18* 2nd I.P. ☒ L.P. *24*  
 " " " " " " " " *1"* " *1"* " ☒ " *1"*  
 Pitch " " " " *3.8"* " *4.8"* " ☒ " *4.8"*  
 Type of I.P. Valves (Piston or Slide) *piston* " *slide* " ☒ " *slide*  
 " Valve Gear *Link motion.*

Diameter of Piston Rods (plain part) *4"* At Bottom of Thread *2.787*  
 Makers " *North Eastern Marine Eng Co Ltd* Material *S.S.*

Diameter of Connecting Rods (smallest part) *4"* Material *Iron*

Makers " *North Eastern Marine Eng Co Ltd*

Diars. of Crosshead Gudgeons *4 1/2* Length of Bearing *6* Material *I.P.*

No. of Top End Bolts (each Rod) *2* Effective Diar. *2.047* Material *Steel*  
 " Bot. " " *2* " *2.047* " *Steel*  
 " Main Bearings *6* Lengths *7 1/4"*  
 " Bolts in each *2* Effective Diar. *1.787* Material *Steel*

No. of Holding Down Bolts, each Engine *39* No. of Metal Checks *39*  
 " " " " *1 1/4"* Average Pitch *14'*

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 *17.5.09*

## SKETCHES.



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SKETCHES.

SHAFTING.

Are Crank Shafts Built? *yes* No. of Lengths in each *three* Angle of Cranks *120°*

Diar. of Crank Shafts by Rule *8.02"* Actual *8 1/8"* Diar. in Way of Webs *8 7/8"*

Makers of " *J. Spencer & Sons* Material *1.3*

Diar. of Crank Pins *8 1/8"* Diar. in Way of Web *8 1/8"*

Makers of " *J. Spencer & Sons* Material *1.3*

Width across Crank Webs at Centre of Shaft *17 1/2"* Thickness *5 1/8"*

" " " " Crank Pins *15"*

" " " " Narrowest part *15"*

Makers of Crank Webs *J. Spencer & Sons* Material *1.3*

Diar. or Breadth of Keys in Crank Webs *1 5/8"* Length *3 1/2"*

" of Dowel Pins in Crank Pins *1"* Length *2 1/2"* Screwed or Plain *plain*

No. of Bolts in each Coupling *6* Diar. at Mid Length *2"* Diar. of Pitch Circle *13"*

Material of Coupling Bolts

Crank Shafts Finished by *North Eastern Marine Eng Co. Ltd*

Greatest Distance from edge of Main Bearing to Crank Web *1 1/4"*

Description of Thrust Blocks *Horn shoe*

Number " " Rings *Five*

Diar. of Thrust Shafts by Rule *8.02* Actual (at bot. of Collars) *8 3/16"* Over Collars *11 1/4"*

" " at Forward Coupling *7 7/8"* After Coupling *7 7/8"*

No. of Thrust Collars *4* Thickness *2 1/4"* Distance apart *2 3/4"*

Thrust Shafts Forged by *J. Spencer & Sons* Material *1.3*

" Finished by *North Eastern Marine Eng Co. Ltd*

Diar. of Intermediate Shafting by Rule *✓* Actual

No. of Lengths, each Engine

Diar. of Bearings Length Distance apart

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

Intermediate Shafts Forged by ✓      Material ✓

Finished by ✓

Diar. of Propeller Shafts by Rule  $9.22''$  Actual  $9\frac{1}{2}''$  At Couplings  $8\frac{3}{4}''$

Are Propeller Shafts fitted with Continuous Brass Liners? *yes*

Diar. over Liners  $10\frac{1}{2}''$  Length of After Bearings

Of what Material are the After Bearings composed? *lignum vitae*

Distance from After Bearing in Stern Tube to nearest Tunnel Bearing

Are the After Bearings lubricated with Oil or Sea Water?

What means are adopted to prevent Sea Water entering the Stern Tubes?

Propeller Shafts Forged by *North Eastern Marine Eng Co* Material *Iron*

Finished by

No. of Propellers *One* Diar.  $12'0''$  Pitch  $18'0''$

Blades, each Propeller *four* Fitted or Solid *fitted*

Material of Blades *cast iron* Boss *cast iron*

Surface, each Propeller  $46\frac{1}{2}$  Diar. of Propeller Rule Diar. of Crank Shaft =  $14.9$

Coefficient of Displacement of Vessel at  $\frac{1}{2}$  Moulded Depth  $81$

# 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 the Pump 15  
 Type of 15  
 Date of the Pump 15  
 Material 15  
 How the Pump is worked 15

No. of the Pump 15  
 Type of 15  
 Date of the Pump 15  
 Material 15  
 How the Pump is worked 15

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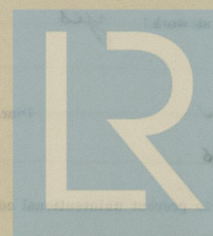
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 Date of the Pump 15  
 Material 15  
 How the Pump is worked 15

No. of the Pump 15  
 Type of 15  
 Date of the Pump 15  
 Material 15  
 How the Pump is worked 15



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## PUMPS, ETC

No. of Air Pumps *One*      Diar. *15"*      Stroke *15"*  
 Type of " *Edwards Patent*  
 Diar. of Air Pump Rod *2 1/4"*      Material *Muntz Metal*  
 How are Air Pumps Worked? *by Main Engine*

No. of Centrifugal Circulating Pumps *One*      Maker *Watson & Co.*  
 " Reciprocating " " ✓      Diar. ✓      Stroke ✓  
 Diar. of Circulating Pump Rods ✓      Material ✓  
 How are Circulating Pumps Worked? *by Separate Engine*

Diar. of Circulating Pump Suction from Sea *5 1/2"*  
 Has each Circulating Pump a Bilge Suction with Non-return Valve? *yes*      Diar. *4"*

No. of Feed Pumps on each Engine *2*      Diar. *2 1/2"*      Stroke *15"*  
 Where do they pump from? *hotwell*  
 " " discharge to? *Main Boilers and overboard.*  
 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. *2 1/2"*      Stroke *15"*  
 Where do they pump from? *all bilges*  
 " " discharge to? *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? *all but main discharge*

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.

Boilers made by *North Eastern Marine Eng Co Ltd.*" at *Wallsend*Works No. *1899*Date when Plan approved *17-2-09*Boiler Plates, Iron or Steel *Steel*Makers of Shell Plates *J. Spencer & Sons*" Internal Plates *J. Spencer & Sons*" Furnaces *Deighton Pat. Blue Co Leeds*" Stay Bars *J. Spencer & Sons*" Rivets *J. Miller & Co*Material tested by (B.C., B.T., etc.) *B.C. & B of T.*No. of Boilers *Two*Single or Double-ended *Single ended*No. of Furnaces, each Boiler *Two*Type of Furnaces *Corrugated*Approved Working Pressure *180 lbs*Hydraulic Test Pressure *260 lbs*Date of Hydraulic Test *28-4-09*" when Safety Valves set *8-5-09*Pressure on Valves *180 lbs*Date of Steam Accumulation Test *4-4-09*Max. Pressure under Accumulation Test *Accumulation 8 lbs*System of Draught *Natural*Can Boilers be worked separately? *yes*Greatest inside Diam. of Boilers *9-10 1/4"*" " Length " *10' 3 7/8"*Square Feet of Heating Surface, each Boiler *859 sq ft*" Grate " " *26.4 sq ft*

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No. of Safety Valves, each Boiler. *2*

Diar. " " " *2"*

Area " " " "

Are the Valves fitted with Easing Gear? *yes*

No. of Pressure Gauges, each Boiler *One*

" Water " " *One*

" Test Cocks, " *2*

" 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? *yes*

No. of Strakes of Shell Plating in each Boiler *One*

" Plates in each Strake *One*

Thickness of Shell Plates by Rule

" " Approved *7/8"*

" " in Boilers *7/8"*

Are the Rivet Holes Punched or Drilled? *Drilled*

Are Rivets Iron or Steel? *Steel*

Are the Longitudinal Seams Butt or Lap Joints? *Butt joints*

Are the Double Butt Straps of equal width? *yes*

Thickness of outside Butt Straps *3/4"*

" inside " *3/4"*

Are Longitudinal Seams Hand or Machine Riveted? *Machine*

Are they Single, Double, or Treble Riveted? *Treble*

Diar. of Rivet Holes *1"*

Pitch " *6 7/8"*

Width of ~~Covering~~ *Straps* *14 11/16"*

Percentage of Strength in Longitudinal Seams



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No. of Rows of Rivets in Centre Circumferential Seams ✓

Are these Seams Hand or Machine Riveted? ✓

Diar. of Rivet Holes ✓

Pitch " ✓

Width of Overlap ✓

No. of Rows of Rivets in End Circumferential Seams *Two*Are these Seams Hand or Machine Riveted? *Back machine, Front hand.*Diar. of Rivet Holes *1"*Pitch " *3"*Width of Overlap *5"*Size of Manholes in ~~End~~ *End* *16" x 12"*Dimensions of Compensating Rings *flanged in*

Thickness of End Plates in Steam Space by Rule

" " " " " Approved *1 1/32"*" " " " " in Boilers *1 1/32"*Pitch of Steam Space Stays *18" x 14"*

Eff. Diar. " " " by Rule

" " " " " Approved *2 3/4"*" " " " " in Boilers *2 3/4"*Material of " " " *Steel*How are Stays Secured? *nuts in & out*Diar. and Thickness of Loose Washers on End Plates *9" x 3/4"*" " Riveted " " " *11 x 1 1/32"*

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. 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  $1\frac{1}{32}$ "

" " " " in Boilers  $1\frac{1}{32}$ "

Pitch of Stays at Wide Spaces between Fireboxes *Three  $2\frac{1}{4}$ " stays fitted around manhole*

Thickness of Doublings in " "

Thickness of Front End Plates at Bottom by Rule

" " " " Approved  $1\frac{1}{32}$ "

" " " " in Boilers  $1\frac{1}{32}$ "

No. of Long. Stays in Spaces between Furnaces *Three  $2\frac{1}{4}$ " stays fitted around manhole*

Eff. Diar. of Stays by Rule

" " " " Approved  $2\frac{1}{4}$ "

" " " " in Boilers  $2\frac{1}{4}$ "

Material of " *Steel*

Thickness of Front Tube Plates by Rule

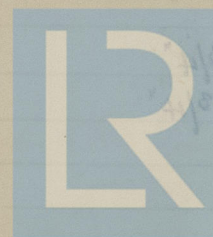
" " " " Approved  $1\frac{1}{32}$ "

" " " " in Boilers  $1\frac{1}{32}$ "

Pitch of Stay Tubes at Spaces between Stacks of Tubes  $14\frac{1}{2}$ " centres

Thickness of Doublings in " " " ✓

" Stay Tubes at " " "  $3/8$



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Are Stay Tubes fitted with Nuts at Front End? *nuts fitted at top corners.*

# Thickness of Back Tube Plates by Rule

|   |       |   |            |                                      |
|---|-------|---|------------|--------------------------------------|
| "                                       | "     | " | Approved   | $\frac{3}{4}$ "                      |
| "                                       | "     | " | in Boilers | $\frac{3}{4}$ "                      |
| Pitch of Stay Tubes in Back Tube Plates |       |   |            | $9" \times 9\frac{1}{2}"$            |
| "                                       | Plain | " |            | $4\frac{1}{2}" \times 4\frac{3}{4}"$ |
| Thickness of Stay Tubes                 |       |   |            | $\frac{3}{8}"$ , $\frac{5}{16}"$     |
| "                                       | Plain | " |            | 8 B. W. Ls.                          |
| External Diar. of Tubes                 |       |   |            | $3\frac{1}{4}"$                      |
| Material                                |       |   |            | <i>Iron</i>                          |

# Thickness of Furnace Plates by Rule

|                                    |   |   |            |                    |
|------------------------------------|---|---|------------|--------------------|
| "                                  | " | " | Approved   | $\frac{15}{32}"$   |
| "                                  | " | " | in Boilers | $\frac{15}{32}"$   |
| Smallest outside Diar. of Furnaces |   |   |            | $31\frac{15}{16}"$ |
| Length between Tube Plates         |   |   |            | 6' 8"              |

Width of Combustion Chambers (Front to Back)  $30"$

# Thickness of " " " Tops, by Rule,

|   |   |   |   |            |                  |
|---|---|---|---|------------|------------------|
| " | " | " | " | Approved   | $\frac{23}{32}"$ |
| " | " | " | " | in Boilers | $\frac{23}{32}"$ |

Pitch of Screwed Stays in C.C. Tops  $10" \times 9"$

# Eff. Diar. " " by Rule

|          |   |   |            |                 |
|----------|---|---|------------|-----------------|
| "        | " | " | Approved   | $1\frac{3}{4}"$ |
| "        | " | " | in Boilers | $1\frac{3}{4}"$ |
| Material |   |   |            | <i>Steel</i>    |

Thickness of Combustion Chamber Sides by Rule



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Thickness of Combustion Chamber Sides Approved  $\frac{23}{32}$   
 " " " " in Boilers  $\frac{23}{32}$

Pitch of Screwed Stays in C.C. Sides  $10" \times 9\frac{1}{4}"$

Eff. Diar. " " by Rule  
 " " " Approved  $1\frac{3}{4}"$   
 " " " in Boilers  $1\frac{3}{4}"$   
 Material " " *Steel*

Thickness of Combustion Chamber Backs by Rule

" " " " Approved  $\frac{23}{32}$   
 " " " " in Boilers  $\frac{23}{32}$

Pitch of Screwed Stays in C.C. Backs  $10" \times 9\frac{1}{4}"$

Eff. Diar. " " by Rule  
 " " " Approved  $1\frac{3}{4}" + 1\frac{7}{8}"$   
 " " " in Boilers  $1\frac{3}{4}" + 1\frac{7}{8}"$   
 Material " " *Steel*

Are all Screwed Stays fitted with Nuts inside C.C. *yes*  
 Thickness of Combustion Chamber Bottoms  $1\frac{3}{16}"$

No. of Girders over each Wing Chamber *Four*

" " " Centre " *✓*

Depth and Thickness of Girders  $8\frac{1}{2}" \times 7\frac{1}{8}"$  *double*

Material of Girders *Steel*

No. of Stays in each *Two*

No. of Stay Tubes, each Boiler *44*

" " Plain " " *66*

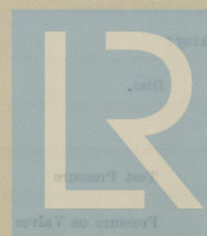
Size of lower Manholes  $16" \times 12"$

# VERTICAL DONKEY BOILERS

It is 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 the Grate  
 Are Boiler Crown Flat or Inclined?  
 Internal Radius of Inclined Boilers  
 Description of Crown in Boiler Crown  
 Diameter of Boiler  
 Width of Grate  
 Height of Inclined Crown above the Grate  
 Are Boiler Crown Flat or Inclined?  
 Internal Radius of Inclined Crown  
 No. of Crown Stays  
 Effective Diar.  
 Internal Diar. of Flange at Top  
 Bottom  
 Thickness of Flange  
 Internal Diar. of Flange at Top  
 Internal Diar.  
 Material of Water Tubes  
 No. of Screwed Stays in Boiler Boilers  
 Are they fitted with Nuts inside?  
 Outside?

## SUPERHEATERS



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# VERTICAL DONKEY BOILERS.

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 Boilers

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

Diam. 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

Effective Diam.

Material

External Diam. of Firebox at Top

Bottom

Thickness of Plates

No. of Water Tubes

Int. Diam.

" "

Material of Water Tubes

No. of Screwed Stays in Firebox Sides

Eff. Diam.

Material

Are they fitted with Nuts inside?

Outside?

## 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 Superheaters

Diam.

Area

Are " " fitted with Easing Gear?

Date of Hydraulic Test

Test Pressure

Date when Safety Valves set

Pressure on Valves

## SKETCHES.



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## MAIN STEAM PIPES.

|                             |          |  |  |  |
|-----------------------------|----------|--|--|--|
| No. of Lengths              | 2        |  |  |  |
| Material                    | Copper   |  |  |  |
| Brazed, Welded, or Seamless | Seamless |  |  |  |
| Internal Diam.              | 3"       |  |  |  |
| Thickness                   | 8 W.Ls.  |  |  |  |
| How are Flanges Secured?    | Brazed   |  |  |  |
| Date of Hydraulic Test      | 6.5.09   |  |  |  |
| Test Pressure               | 360 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

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 *Swan Hunter & Wigham Richardson.*  
 No. and Description of Dynamos *One Compound Wound multipolar.*  
 Makers of Dynamos *J. H. Holmes & Co.*  
 Capacity *56* Amperes, at *110* Volts, *375* Revols. per Min.  
 Current Alternating or Continuous *Continuous*  
 Position of Dynamos *Lower platform in Engine Room.*  
 „ Main Switch Board *near Dynamo*  
 No. of Circuits to which Switches are provided on Main Switch Board *3*

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. |
|-----------------|--------------------------|-------------------|---------------|-------------------------|--------------------|-------------------------|----------------------------|---------------------------------|
| <i>1</i>        | <i>Forward</i>           | <i>33</i>         | <i>16</i>     | <i>16.5</i>             | <i>7/16</i>        | <i>1000<sup>B</sup></i> | <i>100%</i>                | <i>660 meg</i>                  |
| <i>2</i>        | <i>Engine Room</i>       | <i>27</i>         | <i>16</i>     | <i>13.5</i>             | <i>7/16</i>        | <i>"</i>                | <i>"</i>                   | <i>"</i>                        |
| <i>3</i>        | <i>Accommodation apt</i> | <i>20</i>         | <i>16</i>     | <i>10</i>               | <i>7/18</i>        | <i>"</i>                | <i>"</i>                   | <i>"</i>                        |

Total No. of Lights *80* No. of Motors driving Fans, &c. ☒ No. of Heaters ☒  
 Current required for Motors and Heaters ☒



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

*Chart Room 6. Engine Room 6.  
all other lights fitted with Separate  
Switches.*

Are Cut-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits

*yes*

On Aux. " " each Auxiliary Circuit

*yes*

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 Cut-outs constructed of Non-inflammable Material?

*yes*

Are they placed so as to be always and easily accessible?

*yes*

Smallest Single Wire used, No. *18* S.W.G., Largest, No. *18* S.W.G.

How are Conductors in Engine and Boiler Spaces protected?

*lead & armour*

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

*lead*

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp

*Iron pipes & armour*

(2) " " passing through Bunkers or Cargo Spaces

*" " "*

(3) " " Deck Beams or Bulkheads

*fibre ferrules*

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? *no joints*

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

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?

*150' 000*

Ohms.

Is the Installation supplied with a Voltmeter?

*yes*

" " " an Ampere Meter?

*yes*

Date of Trial of complete Installation

*14-5-09*

Duration of Trial

*6 hours*



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## EVAPORATORS.

No. ☒ Type ☒ Tons per Da ☒  
 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

*Ballast Donkey*  
 No. of Donkeys *One*  
 Type *Horizontal*  
 Makers *Watson & Co.*  
 Single or Duplex *Duplex*  
 " Double-Acting *Double acting*  
 Diam. of Steam Cylinders *7 1/2"*  
 " Pumps *10 1/4"*  
 Stroke of " *10 1/4"*  
 Where do they pump from? *Tanks, Sea & bilges.*  
 Where do they discharge to? *Condenser, Tanks & overboard.*

Capacity, Tons per Hour of Ballast Donkey

Diam. of Pipe required by Rule for

## FEED WATER FILTERS.

No. *One* Type *Hy Watson & Co.* Size *1180 sq m*  
 Makers *Watson & Co., Newcastle* filtering area  
 Working Pressure *180 lbs* Test Pressure ☒ Date of Test ☒

## FORCED DRAUGHT FANS.

No. of Fans ☒ Diam. ☒ Revols. per min. ☒  
 How are Fans driven? ☒

## PUMPS.

*Feed Donkey*  
*One*  
*Horizontal*  
*Watson & Co.*  
*Duplex*  
*Double acting*  
*4 1/2"*  
*2 3/4"*  
*4"*  
*Hotwell, Sea & boilers.*

*Sanitary Donkey*  
*One*  
*Horizontal*  
*Watson & Co.*  
*Duplex*  
*Double acting*  
*4 1/2"*  
*2 3/4"*  
*4"*  
*Sea*

To boilers &amp; deck.

To Sanitary and wash deck.



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largest Ballast Tank

Velocity of Water in Pipe



## 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 Studs | 6       | " Valve Chest Cover Bolts Studs | 6       |
| " Feed Pump Valves        | 2       | " Bilge Pump Valves             | 2       |
| " Safety Valve Springs    | One     | " Fire Bars                     | 1/4 set |
| " Piston Rings            | One Set | " Junk Ring Bolts Studs         | ✓       |
| " 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                      | 2       |
| " Boiler Tubes            | ✓       | " Condenser Tubes               | ✓       |

## OTHER ARTICLES OF SPARE GEAR:—

2 Main & 2 donkey check valves, One set ballast, feed and Sanitary pump valves, a quantity of iron plates, bars, bolts, nuts and washers assorted.

## 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

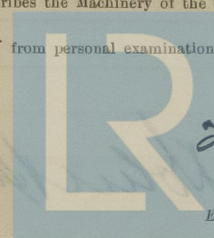
Surveyor

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. *Keyport*

as ascertained by me from personal examination.



*Thos. L. George*  
 Lloyd's Register  
 Engineer-Surveyor to the British Corporation for the  
 Survey and Registry of Shipping.



## Fees—

## MAIN BOILERS.

H.S. 1418 Sq. ft. 8 : 10 : 0

G.S. 52.8 " : :

## DONKEY BOILERS.

H.S. ✓ Sq. ft. : :

G.S. ✓ " : :

£ 8 : 10 : 0

## ENGINES.

L.P.C. 23.3 Cub. ft. 7 : 0 : 0

Testing, &amp;c. : :

£ : :

Expenses ... : :

Total ... £ 15 : 10 : 0

It is submitted that this Report be approved,

*W. H. King*  
Chief Surveyor.

Approved by the Committee, *for the class of M B R<sup>5</sup>\**  
*on the 23<sup>rd</sup> June 1909*

Fees applied for 21-5-9

Fees paid 24-5-9

*Robert Manning*  
Secretary.



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