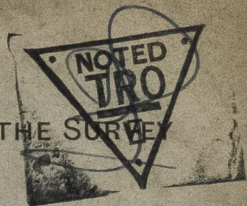


No. 683



THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 654 No. in Register Book 1184

"HEROINE"
S.S. ~~"FLYING SERPENT"~~

Makers of Engines *Ferguson Bros.*

Works No. 182

Makers of Main Boilers *Clyde S. & Co. Ltd*

Works No. 459

Makers of Donkey Boiler



Works No.



MACHINERY.



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Lloyd's Register
Foundation

013403-013408-0058

No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 654 No. in Register Book 1184

Received at Head Office 9th Feb. 1909

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the *Single screw tug*
"HEROINE"
~~"FLYING SERPENT"~~

Port of Registry

Sydney N. S. W.

Registered Owners

~~*Clyde Shipping Co. Ltd.*~~
The Commercial Banking Co. of Sydney N. S. W.

Surveyor's District

Clyde

Date of Completion of Engines

January 1909

" " " " Main Boilers

do do

" " " " Donkey "

Trial Run at

Firth of Clyde

Date

20.1.09

First Visit

26.8.1908

Last Visit

2.2.09

Total Number of Visits

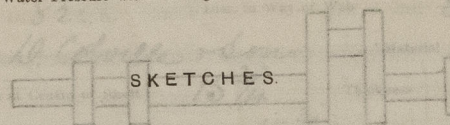
21

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ENGINES.

Made by *Ferguson Bros.*
 " at *Port Glasgow* Works No. *182*
 Description *Compound, 2 Cranks.*
 No. of Cylinders, each Engine *2* Diars. *20", 42"* Stroke *27"*
 Cub. feet in each L.P. Cyl. *21.65* Revols. per Min. *131* L.H.P. *905*
 Pressure in I.P. Receiver at full Power *✓* 2nd I.P. *✓* L.P. *23 lbs.*
 Thickness of Metal in H. P. Cyl. *1 1/8"* I.P. *✓* " *✓* " *1 1/8"*
 " " " " Liner *1 1/8"* " *✓* " *✓* " *✓*
 " " " " Valve Chest *1"* " *✓* " *✓* " *1"*
 Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cyl.? *yes*
 " " " " each Receiver? *yes*
 Number of ~~bolts~~ Studs in H.P. Cyl. Cover *18* L.P. *✓* 2nd I.P. *✓* L.P. *21*
 Eff. Diar. " " " *942"* " *✓* " *✓* " *942"*
 Pitch " " " *4 5/8"* " *✓* " *✓* " *6 7/8"*
 Type of H.P. Valves (Piston or Slide) *slide* " *✓* " *✓* " *slide*
 " Valve Gear *Double link*
 Diameter of Piston Rods (plain part) *4 1/4"* At Bottom of Thread *3.287*
 Makers " *M. Reid & Co.* Material *Steel*
 Diameter of Connecting Rods (smallest part) *4 1/4"* Material *Steel*
 Makers " " *M. Reid & Co.*
 Diar. of Crosshead Gudgeons *4 1/4"* Length of Bearing *2 @ 4 1/4"* Material *Steel*
 No. of Top End Bolts (each Rod) *4* Effective Diar. *1.662* Material *Steel*
 " Bot. " " *2* " *2.037* " *steel*
 " Main Bearings *4* Lengths *10"*
 " Bolts in each *2* Effective Diar. *1.787"* Material *Steel*

No. of Holding Down Bolts, each Engine *25* No. of Metal Chocks *12*
 Eff. Diar. " " " *942"* Average Pitch *11"*
 Are the Engines bolted directly to the Tank Top? *no tank*
 Are the Bolts tapped through the Tank Top and fitted with Nuts inside? *✓*
 Date of Test of Tank by Water Pressure with Holding Down Bolts in place *✓*



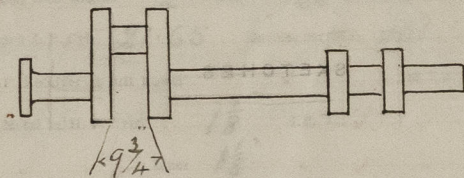
SKETCHES.



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SKETCHES.



SHAFTING.

Are Crank Shafts Built? *Yes* No. of Lengths in each *1* Angle of Cranks *90°*

Diar. of Crank Shafts by Rule *8.06* Actual *8 1/2"* Diar. in Way of Webs *8 3/4"*

Makers of " *Jno Purden & Sons* Material *Steel*

Diar. of Crank Pins *8 1/2"* Diar. in Way of Web *8 1/2"*

Makers of " *D. Colville & Sons* Material *Steel*

Width across Crank Webs at Centre of Shaft *15 3/4"* Thickness *5 1/4"*

" " " " Crank Pins *15 3/4"* " *5 1/4"*

" " " " Narrowest part *12 5/8"* " *5 1/4"*

Makers of Crank Webs *D. Colville & Sons* Material *Steel*

Diar. or Breadth of Keys in Crank Webs *1 1/2" diar* Length *4 1/2"*

" of Dowel Pins in Crank Pins *1"* Length *4* Screwed or Plain *screwed*

No. of Bolts in each Coupling *6* Diar. at Mid Length *2"* Diar. of Pitch Circle *13 1/2"*

Material of Coupling Bolts *Steel*

Crank Shafts Finished by *Crow, Harvey & Co*

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

Description of Thrust Blocks *Horse shoe type*

Number " " Rings *7*

Diar. of Thrust Shafts by Rule *8.06* Actual (at bot. of Collars) *8 1/2"* Over Collars *14 1/2"*

" " at Forward Coupling *8 1/2"* After Coupling *8 1/2"*

No. of Thrust Collars *7* Thickness *1 1/2"* Distance apart *3 1/4"*

Thrust Shafts Forged by *Clyde & E Co.* Material *Steel*

" Finished by *Ferguson Bros.*

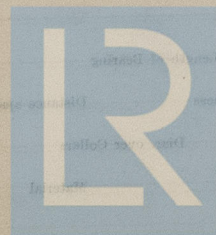
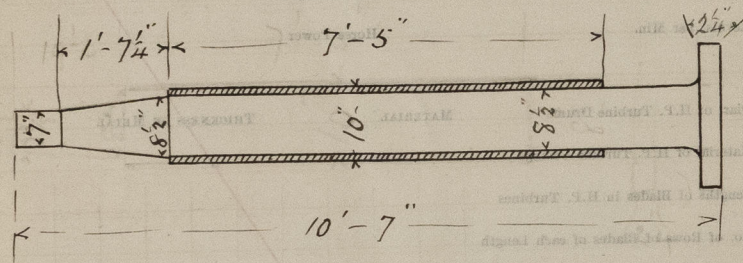
Diar. of Intermediate Shafting by Rule *7.658* Actual *8 1/2"*

No. of Lengths, each Engine *1* No. of Tunnel Bearings *1*

Diar. of Bearings *8 1/2"* Length *12"* Distance apart *10'-6" to thrust shaft-bearing*

No. of Bolts, each Coupling **6** Diar. at Mid Length **2"** Diar. of Pitch Circle **13½"**
 Intermediate Shafts Forged by **Clyde S. & Co.** Material **Steel**
 Finished by **Ferguson Bros.**
 Diar. of Propeller Shafts by Rule **8.06** Actual **8½"** At Couplings **8½"**
 Are Propeller Shafts fitted with Continuous Brass Liners? **Yes**
 Diar. over Liners **10"** Length of After Bearings **3'-3"**
 Of what Material are the After Bearings composed? **Lignum vitae**
 Distances from After Bearing in Stern Tube to nearest Tunnel Bearing **12'-9" centres**
 Are the After Bearings lubricated with Oil or Sea Water? **Sea Water**
 What means are adopted to prevent Sea Water entering the Stern Tubes? ☒ **Propeller Shafts Forged by** **Clyde S. & Co.** Material **Steel**
 Finished by **Ferguson Bros.**
 No. of Propellers **1** Diar. **9'-2"** Pitch **12'-3"**
 Blades, each Propeller **4** Fitted or Solid **Fitted**
 Material of Blades **Cast Iron** Boss **Cast Iron**
 Surface, each Propeller **26.64** Diar. of Propeller **13.65**
 Rule Diar. of Crank Shaft = **53**
 Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth

TURNSKETCHES



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TURBINE ENGINES.

Type

No. of H.P. Turbines

No. of L.P. Turbines

No. of Astern "

How arranged

Revolts. 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

PUMPS, ETC

No. of Air Pumps 1 Diar. 14" Stroke 13½"

Type of " *Edward's*

Diar. of Air Pump Rod 2¼" Material *Muntz Metal*

How are Air Pumps Worked? *By levers from L.P. Engine*

No. of Centrifugal Circulating Pumps 1 Maker *Drysdale & Co*

" Reciprocating " " Diar. " Stroke " ✓

Diar. of Circulating Pump Rods ✓ Material ✓

How are Circulating Pumps Worked? *Independent Vertical Engine*

Diar. of Circulating Pump Suction from Sea 7"

Has each Circulating Pump a Bilge Suction with Non-return Valve? *Yes* Diar. 4"

No. of Feed Pumps on each Engine 1 Diar. 2¾" Stroke 13½"

Where do they pump from? *Hotwell*

" " discharge to? *Boilers, direct or through Heater*

Are Spring-loaded Relief Valves fitted to each Pump? *Yes* ✓

Can one Pump be overhauled while the others are at work? ✓

No. of Bilge Pumps on each Engine 1 Diar. 3" Stroke 13½"

Where do they pump from? *All Bilges*

" " discharge to? *Overboard* ✓

Can one Pump be overhauled while the others are at work? ✓

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*

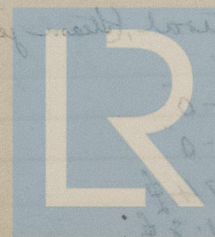
Are all Sea Connections made with Valves or Cocks fitted direct to the Hull Plating? *Yes*

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*



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BOILERS.

Boilers made by *Clyde Shipbuilding & Engineering Co Ltd*
 at *Port Glasgow*
 Works No. *459*
 Date when Plan approved *27.7.1908*
 Boiler Plates, Iron or Steel *Steel*
 Makers of Shell Plates *Steel Co. of Scotland Ltd*
 „ Internal Plates *do*
 „ Furnaces *Leeds Forge Co Ltd*
 „ Stay Bars *Steel Co. of Scotland Ltd*
 „ Rivets *N.W. Rivet, Bolt & Nut Factory Ltd*
 Material tested by (B.C., B.T., etc.) *B.C. & B.T.*
 No. of Boilers *One*
 Single or Double-ended *Single*
 No. of Furnaces, each Boiler *3*
 Type of Furnaces *Morison*
 Approved Working Pressure *125 lbs*
 Hydraulic Test Pressure *250 lbs*
 Date of Hydraulic Test *23.11.08*
 „ when Safety Valves set *17~~27~~.12.08*
 Pressure on Valves *129 lbs*
 Date of Steam Accumulation Test *17~~27~~.12.08*
 Max. Pressure under Accumulation Test *132 lbs.*
 System of Draught *Natural, (Steam jet in funnel)*
 Can Boilers be worked separately? *✓*
 Greatest inside Diam. of Boilers *15'-0"*
 „ „ Length „ *12'-0"*
 Square Feet of Heating Surface, each Boiler *1994^{sq} ft*
 „ „ „ „ *61.8^{sq} ft*



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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
2
3 1/4
8.295

Yes

2

1

3

1

Yes

Yes, cocks

Yes

One

2

1 1/2

1 3/32

1 3/32

Drilled

Steel

Lap

✓

✓

✓

Machine
Quadruple

3

1/8

5 3/4

12/16

76.25%

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 Circumferential Seams

Are these Seams Hand or Machine Riveted? (Back of Machine)

Diar. of Rivet Holes

Pitch

Width of Overlap

Size of Machines in Shell

Dimensions of Connecting Pipes

Thickness of End Plates in Steam Space by Rule

Approved " " " "

" " " " in Boilers

Pitch of Steam Space Straps

EN. Plate " " by Rule

Approved " " " "

" " " " in Boilers

Material of " " " "

How are these secured?

How and Thickness of Loose Weathers on End Plates

Diar. of Rivet Holes

Pitch " " " "



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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

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

Diar. of Rivet Holes

Pitch

Width of Overlap

Size of Manholes in Shell

X Dimensions of Compensating Rings

Thickness of End Plates in Steam Space by Rule

" " " " " Approved

" " " " " in Boilers

Pitch of Steam Space Stays

Eff. Diar. " " " by Rule

" " " " " Approved

" " " " " in Boilers

Material of " " "

How are Stays Secured?

Diar. and Thickness of Loose Washers on End Plates

" " " Riveted " " "

Width " " Doubling Strips " " "

Thickness of Middle Back End Plate by Rule

" " " " " Approved

" " " " " in Boilers

✓ 2

✓ 4

✓ 8

✓ 16

✓ 2

2

1 7/8

3-9 1/2"

6 1/4"

17" x 13"

34 1/2" x 30 1/2" x 1 3/32"

14 1/6"

16

29 1/32"

29 1/32"

32

18" x 16"

2-135"

2-34"

2-34"

Steel

Double nuts

✓

✓

✓

11 1/4"

16

3 1/4"

3 1/4"

3 1/4"

Thickness of Doubling in White Space between Plates

Pitch of Stays at

Eff. Diar. of Stays by Rule

Approved " " "

" " " in Boilers

Material of

Are Stays Secured with Nuts outside?

Thickness of Back End Plates at Bottom by Rule

Approved " " "

" " " in Boilers

Pitch of Stays at White Space between Plates

Thickness of Doubling in

Thickness of Front End Plates at Bottom by Rule

Approved " " "

" " " in Boilers

No. of Long Stays in Space between Frames

Eff. Diar. of Stays by Rule

Approved " " "

" " " in Boilers

Material of

Thickness of Front Tube Plates by Rule

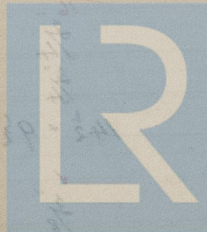
Approved " " "

" " " in Boilers

Pitch of Stay Tubes at White Space between Plates

Thickness of Doubling in

Material of



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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 "

X 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 " " "

$$14\frac{1}{2} \times 8\frac{1}{4}$$

$$1.505$$

$$1.622$$

$$1.622$$

Iron

$$\frac{11.97}{16}$$

$$\frac{3}{4}$$

$$\frac{3}{4}$$

$$\frac{3}{4}$$

$$14\frac{1}{2} \times 14\frac{1}{2}$$

✓

$$\frac{3}{4}$$

$$\frac{3}{4}$$

$$\frac{3}{4}$$

$$3$$

$$1.66$$

$$2.09 \times 1.84$$

$$2.09 \times 1.84$$

Steel

$$\frac{11.9}{16}$$

$$\frac{3}{4}$$

$$\frac{3}{4}$$

$$\frac{3}{4}$$

$$14\frac{1}{2} \times 9\frac{1}{2}$$

✓

$$\frac{3}{8}$$



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Are Stay Tubes fitted with Nuts at Front End?

Inner marginals only

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

Eff. Diar. " " " by Rule

" " " Approved

" " " in Boilers

Material " "

Thickness of Combustion Chamber Sides by Rule

$$\frac{9.73}{16}$$

$$\frac{3}{4}$$

$$9\frac{1}{2} \times 9\frac{1}{2}$$

$$4\frac{3}{4} \times 4\frac{3}{4}$$

$$\frac{3}{8}$$

$$16$$

$$3\frac{1}{2}$$

Iron

$$\frac{6.97}{16}$$

$$\frac{9}{16}$$

$$9\frac{1}{16} \text{ to } 12\frac{1}{32}$$

$$3' - 10\frac{1}{8}$$

$$7' - 4"$$

$$3' - 9" \text{ inside}$$

$$\frac{8.71}{16}$$

$$\frac{9}{16}$$

$$\frac{9}{16}$$

$$9" \times 8\frac{3}{4}$$

$$1.353$$

$$1.372$$

$$1.372$$

Iron

$$\frac{8.71}{16}$$

Thickness of Combustion Chamber Sides by Rule

" " " in Boilers

Pitch of screw stays in C.C. Sides

Eff. Diar. " " " by Rule

" " " Approved

" " " in Boilers

Material " "

Thickness of Combustion Chamber Sides by Rule

" " " Approved

" " " in Boilers

Pitch of screw stays in C.C. Sides

Eff. Diar. " " " by Rule

" " " Approved

" " " in Boilers

Material " "

Are all screw stays fitted with nuts inside C.C.

Thickness of Combustion Chamber Bottoms

No. of tubes over each wing chamber

" " " Centre

Depth and thickness of girders

Material of girders

No. of stays in each

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Thickness of Combustion Chamber Sides Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Sides

Eff. Diam. " " 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. Diam. " " 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

 $\frac{9}{16}$
 $\frac{9}{16}$
 $9" \times 8\frac{3}{4}"$

1.353"

1.372"

1.372"

Iron

8.85"

 $\frac{16}{16}$ $\frac{9}{16}$ $\frac{9}{16}$
 $9\frac{3}{4} \times 8\frac{1}{4}"$

1.369"

1.372"

1.372"

Iron

 $\frac{3}{4}"$
 $\frac{3}{4}"$

5

4

2 plates $10" \times \frac{3}{4}"$

Steel

4

74

158

 $16" \times 12"$

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 Boiler

Height of Boiler Crown above the Grate

Are Boiler Crowns Flat or Dished?

Internal Radius of Dished Ends

Description of Stays in Boiler Crown

Diam. of Water Holes

Height of Firebox Crown above the Grate

Are Firebox Crowns Flat or Dished?

Internal Radius of Dished Crowns

No. of Crown Stays

External Diam. 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?

Description of Superheaters

Where situated

Which Boilers are connected to the superheaters?

Can superheaters be shut off while Boilers are working?

No. of Safety Valves on superheaters

Date of last inspection

Date of 1st annual Test

Date when Safety Valves tested



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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

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

Effective Diar.

Material

External Diar. of Firebox at Top

Bottom

Thickness of Plates

No. of Water Tubes

Int. Diar.

" "

Material of Water Tubes

No. of Screwed Stays in Firebox Sides

Eff. Diar.

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

Diar.

Area

Are " " fitted with Easing Gear?

Date of Hydraulic Test

Test Pressure

Date when Safety Valves set

Pressure on Valves

SKETCHES.

REFRIGERATORS.



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MAIN STEAM PIPES.

No. of Lengths	2	1		
Material	Copper	Copper		
Brazed, Welded, or Seamless	Seamless			
Internal Diam.	5 3/4"	5 3/4"		
Thickness	.176"	.176"		
How are Flanges Secured?	Brazed			
Date of Hydraulic Test	3-12-08	9-12-08		
Test Pressure	250 lbs.	250 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

J. Charters, Glasgow

No. and Description of Dynamos

1, Compound, Continuous Current

Makers of Dynamos

Newtons Ltd., Taunton

Capacity

40 Amperes, at 100 Volts, 350 Revs. per Min.

Current Alternating or Continuous

Continuous

Position of Dynamos

Bottom platform of Engine Room

Main Switch Board

On Ship's side, near dynamo.

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

5.

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	Eng. Room	19	16	10.64	7/8	853	100%	2500
2	Crew	6	16	3.36	7/21	607	"	"
3	Cabin	9	16	5.04	7/21	910	"	"
4	Navigation Lights	7 6	32 16	11.2	7/18	890	"	"
5	Cluster	6	50	10.2	7/8	818	"	"

40 @ 16 C.P.
7.32
6.50

Total No. of Lights

7.32

No. of Motors driving Fans, &c.

W

No. of Heaters

✓

Current required for Motors and Heaters

6.50

✓

✓

(5)

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

1 In Wheelhouse, 9 switches
1 Engine Room, 8 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?	Iron tubes
" " Saloons, State Rooms, &c., " ?	Wood casings
What special protection is provided in the following cases?—	
(1) Conductors exposed to Heat or Damp	Iron tubes
(2) " " passing through Bunkers or Cargo Spaces	Iron tubes
(3) " " Deck Beams or Bulkheads	Iron tubes

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? *220000 Ohms*

Is the Installation supplied with a Voltmeter? *Yes*

" " " an Ampere Meter? *Yes*

Date of Trial of complete Installation *20-21/1/09* Duration of Trial *22 hours*

The double wire system is adopted throughout.



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EVAPORATORS.

No. *1* Type *Horizontal* Tons per Day *1*
 Makers *G. & J. Weir Ltd*
 Working Pressure *150 lbs* Test Pressure *315 lbs* Date of Test *2.11.08*
 Date of Test of Safety Valves under Steam

FEED WATER HEATERS.

No. *1* Type *Surface contact*
 Makers *G. & J. Weir Ltd*
 Working Pressure *150 lbs* Test Pressure *315 lbs* Date of Test *2.11.08*
Leaked by Owner's Supt.

DONKEY

Feed Donkey
 No. of Donkeys *1*
 Type *Vertical*
 Makers *G. & J. Weir Ltd*
 Single or Duplex *Single*
 " Double-Acting *Double*
 Diam. of Steam Cylinders *7"*
 " Pumps *5"*
 Stroke of " *12"*
 Where do they pump from? *Boiler, Sea, Condenser, Hotwell*
 Where do they discharge to? *Boilers (Main & Aux feed)*

Capacity, Tons per Hour of Ballast Donkey

Diam. of Pipe required by Rule for

FEED WATER FILTERS.

No. *1* Type *Horizontal* Size *12"*
 Makers *G. & J. Weir Ltd*
 Working Pressure *150 lbs* Test Pressure *315 lbs* Date of Test *2.11.08*

FORCED DRAUGHT FANS.

No. of Fans *1* How are Fans driven? *By Hand*
 Revols. per minute *120*

PUMPS.

General Donkey
 No. of Pumps *1*
 Type *Vertical*
 Makers *Jno. Cameron Ltd.*
 Single or Duplex *Single*
 " Double-Acting *Double*
 Diam. of Steam Cylinders *6"*
 " Pumps *3"*
 Stroke of " *5"*
 Where do they pump from? *Sea, Hotwell, Tanks (F.W. & Peaks), Bilges and Engine Room bilge.*
 Where do they discharge to? *Condenser, Tanks, Boiler, Deck & overboard*

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	6
" Cylr. Cover Bolts	6	" Valve Chest Cover Bolts	6
" Feed Pump Valves	2	" Bilge Pump Valves	2
" Safety Valve Springs	1	" Fire Bars	4 set
" Piston Rings	✓	" Junk Ring Bolts	✓
" Piston Rods	✓	" Connecting Rods	✓
" Valve Spindles	✓	" Air Pump "	✓
" Air Pump Valves	1 set	" " Buckets	✓
" Crank Pin Bushes	✓	" Crosshead Bushes	✓
" Crank Shafts	✓	" Propeller Shafts	1
" Propellers	✓	" " Blades	2
" Boiler Tubes	6	" Condenser Tubes	12

OTHER ARTICLES OF SPARE GEAR:—

- 1 Main Feed Check Valve
- 1 Aux. " "
- 1 set Metallic Packing for HP piston rod
- 1 " " " " Valve spindle

GENERAL CONSTRUCTION.

31 & 33

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

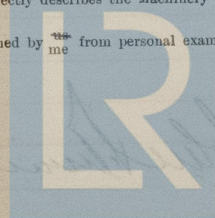
Surveyor

Are the Materials used in the Construction of Engines and Boilers, so far as could be seen, sound and trustworthy?

Is the Workmanship throughout thoroughly satisfactory? *Yes*

The above correctly describes the Machinery of the S.S. *"Heroine"*

as ascertained by me from personal examination. *Skying Serpent*



Lloyd's Register
Engineer Surveyor to the British Corporation for the
Survey and Registry of Shipping.

Fees—

MAIN BOILERS.

H.S. 1994 Sq. ft.

9 : 10 : 0

G.S. 61.8

:

DONKEY BOILERS.

H.S. Sq. ft.

:

G.S. "

:

£ :

ENGINES.

L.P.C. 21.65 Cub. ft.

7 : 0 : 0

Testing, &c. ✓

£ :

Expenses ... ✓

:

Total ... £ 16 : 10 : 0

It is submitted that this Report be approved,

Alfred King
Chief Surveyor.

Approved by the Committee,

for the class of M.B.S. *
on the 10th February 1909.

Fees applied for 26-12-08

Fees paid 28-12-08

Alfred King
Secretary.



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Page

Main Entries

B.S. 1494 9-10-0

B.S. 612

Dover Entries

B.S. 1 19-11

B.S. 1 19-11

Entries

L.P.C. 2/65 2-0-0

Twelve 19-11

Returns

1961 1-10-0

It is submitted that this Report be approved.

John King
 Secretary

Approved by the Committee for the Library of B.R.S.*
 on the 10th November 1961

Two signed for 26-12-61

Two paid 28-12-61

John King
 Secretary



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