

No. 1273

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 1237 No. in Register Book 1917

ANNA LIFFEY
EX
S.S. "FLYING SPRAY"

Makers of Engines FERGUSON BROS LD.

Works No. 220

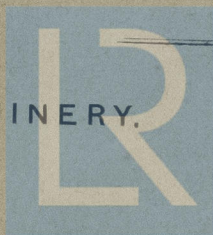
Makers of Main Boilers CLYDE S. & E. CO LD.

Works No. 722

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

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

"Flying Spray"

Port of Registry

Glasgow

Registered Owners

Glyde Shipping Co. Ltd.

Surveyor's District

Glyde

Date of Completion of Engines

4-17

" " " " Main Boilers

4-17

" " " " Donkey

Trial Run at

Stelmorie

Date *7-4-17*

First Visit

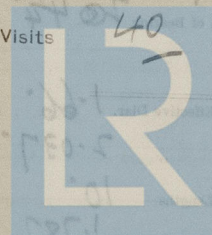
1-3-15

Last Visit

7-4-17

Total Number of Visits

40



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THE
 JOURNAL OF THE
 INSTITUTION OF
 MECHANICAL ENGINEERS
 LONDON

Engines
 Made by *T. Ferguson Bros (Glasgow) Ltd*
 " at *Port. Glasgow*
 Description *Compound, S.L.C., 2 cranks.*
 No. of Cylinders, each Engine *2* Diars. *20" - 42"* Stroke *27"*
 Cub. feet in each L.P. Cylr. *21.65* Revols. per Min. *129* I.H.P. *835*
 Pressure in I.P. Receiver at full Power *1 1/8"* 2nd I.P. *1 1/8"* L.P. *23 lb.*
 Thickness of Metal in H.P. Cylr. *1 1/8"* I.P. *1 1/8"* " *1 1/8"*
 " " " " Liner *1 1/8"* " *1 1/8"* " *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 ~~Studs~~ in H.P. Cylr. Cover *18* I.P. *18* 2nd I.P. *18* L.P. *22*
 Eff. Diar. " " " *942"* " " " *942"*
 Pitch " " " *4 5/8"* " " " *6 3/8"*
 Type of H.P. Valves (Piston or Slide) *Slide* " " " *Slide*
 " Valve Gear *Link motion*

Diameter of Piston Rods (plain part) *4 1/4"* At Bottom of Thread *3.287"*
 Makers " *Steel Coy. of Scotland* Material *S.S.*
 Diameter of Connecting Rods (smallest part) *4 1/4"* Material *S.S.*
 Makers " " *Steel Coy. of Scotland*
 Diar. of Crosshead Gudgeons *4 1/4"* Length of Bearing *2 1/4"* Material *S.S.*
 No. of Top End Bolts (each Rod) *4* Effective Diar. *1.66"* Material *S.S.*
 " Bot. " " *2* " *2.037"* " *S.S.*
 " Main Bearings *4* Lengths *10"*
 " Bolts in each *2* Effective Diar. *1.787"* Material *S.S.*

No. of Holding Down Bolts, each Engine *26* No. of Metal Checks *14*
 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 *one* Angle of Cranks *90°*
 Diar. of Crank Shafts by Rule *8.06"* Actual *8½"* Diar. in Way of Webs *8½"*
 Makers of *Steel Co. of Scotland Ltd.* Material *L.S.*
 Diar. of Crank Pins *8½"* Diar. in Way of Webs *8½"*
 Makers of *Steel Co. of Scotland Ltd.* Material *L.S.*
 Width across Crank Webs at Centre of Shaft *15¾"* Thickness *5¼"*
 " " " " Crank Pins *15¾"* " *5¼"*
 " " " " Narrowest part *5¼"*
 Makers of Crank Webs *Steel Co. of Scotland Ltd.* Material *L.S.*
 Diar. or Breadth of Keys in Crank Webs *1½"* Length *4"*
 " of Dowel Pins in Crank Pins *1* Length *3"* Screwed or Plain *Plain*
 No. of Bolts in each Coupling *6* Diar. at Mid Length *2"* Diar. of Pitch Circle *13½"*
 Material of Coupling Bolts *Steel*
 Crank Shafts Finished by *Ferguson Bros Ltd.*
 Greatest Distance from edge of Main Bearing to Crank Web *¾"*
 Description of Thrust Blocks *Adjustable*
 Number " " Rings *7*

Diar. of Thrust Shafts by Rule *8.06"* Actual (at bot. of Collars) *8½"* Over Collars *14½"*
 " " at Forward Coupling *8½"* After Coupling *8½"*
 No. of Thrust Collars *1* Thickness *1½"* Distance apart *3¼"*
 Thrust Shafts Forged by *Steel Co. of Scotland Ltd.* Material *L.S.*
 " Finished by *Ferguson Bros.*

Diar. of Intermediate Shafting by Rule *7.658"* Actual *7¾"*
 No. of Lengths, each Engine *1* No. of Tunnel Bearings *1*
 Diar. of Bearings *8½"* Length *12"* Distance apart *10' 6" to m.B.*

No. of Bolts, each Coupling

6

Diar. at Mid Length

Diar. of Pitch Circle

13 1/2"

Intermediate Shafts Forged by

Steel lrs of Scotland
Ferguson Bros. Ltd.

Material

L.S.

" " Finished by

Diar. of Propeller Shafts by Rule

8.06"

Actual

8 1/2"

At Couplings

8 1/2"

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?

Kignum-vitae

Distance from After Bearing in Stern Tube to nearest Tunnel Bearing

13'-0" cr.

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

Steel lrs of Scotland
Ferguson Bros. Ltd.

Material

L.S.

" " Finished by

No. of Propellers

1

Diar.

9'-1"

Pitch

12'-3"

" Blades, each Propeller

4

Fitted or Solid

Fitted

Material of Blades

Cast Iron

Boss

Cast Iron

Surface, each Propeller

26.66

Diar. of Propeller

13.65

Coefficient of Displacement of Vessel at 1/2 Moulded Depth

.53

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

Diar. 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 " " "

Diar. 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 " " "

Diar. 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 " " "

Diar. of Turbine Spindles

Length of Bearing

No. of Thrust Collars on each Spindle

Thickness

Distance apart

Diar. of Spindles at Bottom of Collars

Diar. over Collars

Spindles Forged by

Material

" Finished by

SKETCHES.



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SKETCHES.

SKETCHES.

13 1/2

Munt's model

13 1/2

Munt's model

13 1/2

13 1/2



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PUMPS, ETC.

No. of Air Pumps *1* Diar. *14"* Stroke *13½"*
 Type of *Edwards*
 Diar. of Air Pump Rod *2½"* Material *Muntz metal*
 How are Air Pumps Worked? *Levers on LP.*

No. of Centrifugal Circulating Pumps *1* Maker
 " Reciprocating " " *11"* Diar. *13½"* Stroke
 Diar. of Circulating Pump Rods *2* Material *Muntz metal*
 How are Circulating Pumps Worked? *Levers LP.*

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. *3"* Stroke *13½"*
 Where do they pump from? *Hutchell*
 " " discharge to? *Bolles*
 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? *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 *Blyde S. & Co. Ltd*
 " at *Port Glasgow*
 Works No. *722*
 Date when Plan approved *23-2-15*
 Boiler Plates, Iron or Steel *Steel*
 Makers of Shell Plates *James Dunlop & Co*
 " Internal Plates *do*
 " Furnaces *Leeds Forge & Co. L.*
 " Stay Bars *Lancashire Steel Co*
 " Rivets *Shell-steel R.B. & Co. Cl rivets iron.*
 Material tested by (B.C., B.T., etc.) *B.C. & B.O.T.*
 No. of Boilers *One*
 Single or Double-ended *Single*
 No. of Furnaces, each Boiler *3*
 Type of Furnaces *Saighton*
 Approved Working Pressure *130 lbs*
 Hydraulic Test Pressure *160 lbs*
 Date of Hydraulic Test *9-12-15*
 " when Safety Valves set *29-3-17*
 Pressure on Valves *135 lbs*
 Date of Steam Accumulation Test *140 lbs.*
 Max. Pressure under Accumulation Test *X 6-4-17*
 System of Draught *Natural*
 Can Boilers be worked separately? *15'-6"*
 Greatest inside Diam. of Boilers *12'-0"*
 " " Length " *206 1/2'*
 Square Feet of Heating Surface, each Boiler *62 1/2'*
 " Grate " "



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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
3 1/4"
16.590"

Yes
One
One
3
One

Yes
Cocks
Yes

One
2
14.81"
16
17-
16

Drilled
Steel
Butt
Yes

13-
16

Machine
Treble
17-
16

7.5"
Strap 15 5/8"
85-84 0/10



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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?

Diar. 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. Diar. " " " by Rule

" " " " " Approved

" " " " " in Boilers

Material of " " "

How are Stays Secured?

Diar. and Thickness of Loose Washers on End Plates

" " Riveted " " "

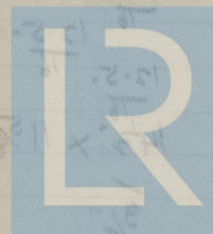
Width " " Doubling Strips " "

Thickness of Middle Back End Plate by Rule

" " " " " Approved

" " " " " in Boilers

Back machine, Front hand

 $1\frac{3}{16}"$ $3.48"$ $5\frac{1}{16}"$ $17" \times 13"$ $37\frac{3}{4}" \times 33\frac{3}{4}"$ 16.27 $\frac{16}{16}$ 16.5 $\frac{16}{16}$ $18\frac{1}{2}" \times 19"$ $2.391"$ $2.591"$ $2.59"$ Steel
Double nuts washers 11.69 $\frac{12}{16}$ 12 $\frac{12}{16}$ 

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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

" " " " " 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 " " "

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

$$1.536$$

$$1.733$$

$$1.733$$

Iron

Yes

$$11\frac{9}{16}$$

$$12\frac{1}{16}$$

$$12\frac{1}{16}$$

$$14\frac{1}{2} \times 10$$

-

manhole

$$12\frac{5}{16}$$

$$12\frac{5}{16}$$

3

$$1.633$$

$$1.84$$

$$1.84$$

Steel

manhole

$$12\frac{5}{16}$$

$$12\frac{5}{16}$$

$$12\frac{5}{16}$$

$$14\frac{1}{2} \times 11\frac{5}{8}$$

$$3\frac{1}{8}$$

The Stay Tubes shall 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 Front Tube Plates by Rule

Approved " " "

" " " " in Boilers

Smallest outside Diam. of Furnaces

Length between Tube Plates

Width of Combustion Chambers Front to Back

Thickness of " " "

Approved " " "

" " " " in Boilers

Pitch of Stay Tubes in Back Tube Plates

" " " " "

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 " " "



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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

Eff. Diar. " " by Rule

" " " Approved

" " " in Boilers

Material " "

Thickness of Combustion Chamber Sides by Rule

$$\frac{10.12}{16}$$

$$\frac{12}{16}$$

$$\frac{12}{16}$$

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

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

$$3\frac{1}{8}$$

$$8 \text{ in.}$$

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

$$4 \text{ in.}$$

$$\frac{7.19}{16}$$

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

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

$$4\frac{6}{8}$$

$$7-4$$

$$45$$

$$\frac{8.85}{16}$$

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

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

$$8\frac{7}{8} \times 9$$

$$1.389$$

$$1.483$$

$$1.483$$

$$4 \text{ in.}$$

$$8.67$$

$$\frac{8.67}{16}$$

Thickness of Combustion Chamber Sides by Rule

" " " in Boilers

Pitch of Screwed 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 Screwed Stays in C.C. Sides

Eff. Diar. " " by Rule

" " " Approved

" " " in Boilers

Material " "

Pitch of Screwed Stays in C.C. Sides

Eff. Diar. " " by Rule

" " " Approved

" " " in Boilers

Material " "

Pitch of Screwed Stays in C.C. Sides

Eff. Diar. " " by Rule

" " " Approved

" " " in Boilers

Material " "



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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

$9\frac{1}{16}$
 $9\frac{1}{16}$
 $9" \times 8\frac{1}{2}"$
 $1.362"$
 $1.483"$
 $1.483"$
Iron

$8.88"$
 $9\frac{1}{16}$
 $9\frac{1}{16}$
 $958" \times 8\frac{1}{4}"$
 $1.386"$
 $1.483"$
 $1.483"$
Iron

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

5
 4
 $10\frac{1}{4}" \times 2 @ \frac{3}{4}"$
Steel
 4

75
 165
 $16" \times 12"$

VERTICAL DOCKERY BOILERS

If the boiler is vertical the following particulars should be stated in addition to those on

Previous pages applicable to such boilers

Type of boiler

Height of boiler (measured above the grate)

Are boiler covers flat or domed?

Internal radius of domed boiler

Description of seams in boiler covers

Diameter of boiler

Height of furnace (measured above the grate)

Are furnace covers flat or domed?

Internal radius of domed furnace

No. of crown stays

External radius of furnace at top

No. of water tubes

Material of water tubes

No. of horizontal stays in furnace sides

Are they fitted with nuts inside?

SUPERHEATERS

Description of superheater

When installed

Which boiler are water tubes connected to?

Are superheaters for saturated steam or for superheated steam?

No. of heating tubes in superheater



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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. MAIN

No. of Boilers	1
Material	Steel
Kind, Welded or Seamless	Welded
Internal Diam.	24"
External Diam.	24"
How are Flanges Secured?	By Bolts
Date of Hydraulic Test	10-3-17
Test Pressure	100 lbs

REFRIGERATORS

No. of Machines	1
Material	Steel
Kind, Welded or Seamless	Welded
Internal Diam.	24"
External Diam.	24"
How are Flanges Secured?	By Bolts
Date of Hydraulic Test	10-3-17
Test Pressure	100 lbs



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MAIN STEAM PIPES.

No. of Lengths	1	2
Material	Copper	
Brazed, Welded, or Seamless	Seamless	
Internal Diam.	5 $\frac{3}{4}$ "	5 $\frac{3}{4}$ "
Thickness	7 m.c.	7 m.c.
How are Flanges Secured?	Brazed	
Date of Hydraulic Test	2-3-17	12-3-17
Test Pressure	760 lb	760 lb

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

Diams.

" 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. Skelers

No. and Description of Dynamos

One Compound wound
Newtons Ltd.

Makers of Dynamos

Capacity

40

Amperes, at

100

Volts,

350

Revs. per Min.

Current Alternating or Continuous

Continuous

Position of Dynamos

Starting Platform Starboard
Close to dynamo

Main Switch Board

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

5 (on 2/pole)

Particulars of these Circuits:—

No. of Circuit.	Name of Circuit.	Number of Lights.	Candle Power.	Current Required, Amps.	Size of Conductor.	Current Density, $\frac{A}{sq. in.}$	Conductivity of Conductor.	Insulation Resistance of Circuit.
1	Port Ace	10	16	5.6	$\frac{7}{2\frac{1}{2}}$	1005	1002	5.0 meg
2	Chute	8	32	8.96	$\frac{7}{20}$	1280	"	on 10.0.
3	Har- galion	13	16+32	11.2	$\frac{7}{8}$	890	"	.8
4	Engine Room light	24	16	13.4	$\frac{7}{8}$	1072	"	8.0 "

Total No. of Lights

55

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

One beside main switch board 3 switches
One in wheelhouse 8

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.

S.W.G., Largest, No.

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

(2) " " passing through Bunkers or Cargo Spaces

(3) " " Deck Beams or Bulkheads

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

Duration of Trial

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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
 Type "
 Makers "
 Single or Duplex
 " Double-Acting
 Diam. of Steam Cylinders
 " Pumps
 Stroke of "
 Where do they pump from?

Where do they discharge to?

Capacity, Tons per Hour of Ballast Donkey

Diam. of Pipe required by Rule for

General Service
 One
 Fly wheel Vertical
 John Cameron who had
 Single
 Double
 6
 3"
 5"
 Sea, Tanks
 Bilges (main direct)
 Deck, overboard,
 Condenser, Tanks, Boilers

FEED WATER FILTERS.

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

FORCED DRAUGHT FANS.

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

PUMPS.



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

OTHER ARTICLES OF SPARE GEAR:—

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

Flying Spray

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

Fees—

MAIN BOILERS.

H.S.

Sq. ft.

G.S.

DONKEY BOILERS.

H.S.

Sq. ft.

G.S.

ENGINES.

L.P.C.

Cub. ft.

Testing, &c.

£

Expenses

Total

£

It is submitted that this Report be approved,

Chief Surveyor.

Approved by the Committee,

Fees applied for

Fees paid

Secretary.



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