

No. 1939

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 1774 No. in Register Book 3064

FRANK H. BROWN

S.S.

DRUMAHOE

Makers of Engines

J. G. Kincaid & Co. Ltd.

Works No.

611

Makers of Main Boilers

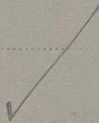
(Same.)

Works No.

"

Makers of Donkey Boiler

Works No.



MACHINERY.



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002725-007735-0194

No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. *1774* No. in Register Book *3064*

Received at Head Office

24th July 1924

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the ~~Single Screw~~ ^{Triple} ~~Steam~~ ^{Screw} Steamer

Official No.

Port of Registry

Newcastle

Registered Owners

Swan Hunter & Wigham

Richardson Wallsend-on-Tyne

Engines Built by

John A. Kincaid & Co. Ltd.

at

Greenock

Main Boilers Built by

(Same firm.)

at

place.)

Donkey

at

Date of Completion

4/24

First Visit

8/11/23

Last Visit

12/7/24

Total Visits

42

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RECIPROCATING ENGINES.

Works No. **611** No. of Sets **1** Description **Triple expansion, Vertical.**

No. of Cylinders each Engine **3** No. of Cranks **3**
 Diars. of Cylinders **16", 27" and 44"** Stroke **33"**

Cubic feet in each L.P. Cylinder **29**

Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.?

" " " each Receiver? **Yes.**
M.P. & L.P. only.

Type of H.P. Valves,

" **M.P.**

" **L.P.**

" **L.P.**

" Valve Gear

" Condenser

Piston.
Slide.
Slide.
Stevenson Link.

Surface

Cooling Surface **950** sq. ft.

Diameter of Piston Rods (plain part)

4 1/8"

Screw part (bottom of thread)

3.037"

Material

Steel.

Diar. of Connecting Rods (smallest part)

4"

Material

Steel.

" Crosshead Gudgeons

4 1/2"

Length of Bearing

7"

Material

"

No. of Crosshead Bolts (each)

4

Diar. over Thrd.

1 3/4"

Thrds. per inch

6

Material

Steel.

" Crank Pin

2

2 1/2"

"

"

"

"

" Main Bearings

6

Lengths

5 @ 8 7/8" and one @ 8 7/16"

" Bolts in each

2

Diar. over Thread

2"

Threads per inch

6

Material

Steel.

" Holding Down Bolts, each Engine

74

Diar.

1"

No. of Metal Chocks

74

Are the Engines bolted to the Tank Top or to a Built Seat?

Tank top.

Are the Bolts tapped through the Tank Top and fitted with Nuts Inside?

Yes.

If not, how are they fitted?

✓

Connecting Rods, Forged by

J. G. Kincaid & Co Ltd

Piston

Crossheads,

Connecting Rods, Finished by

Piston

Crossheads,

Date of Harbour Trial

10/7/24

" Trial Trip

12/7/24

Trials run at

Skelmorlie

Were the Engines tested to full power under Sea-going conditions?

Yes.

If so, what was the I.H.P.?

950

Revs. per min. **96**

Pressure in 1st I.P. Receiver,

40

lbs., 2nd I.P.,

—

lbs., L.P.,

18

lbs., Vacuum, **23.2 ins.**

Speed on Trial

9.96.

If the Conditions on Trial were such that full power records were not obtained give the following estimated

data:—

Builders' estimated I.H.P.

Revs. per min.

Estimated Speed



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TURBINE ENGINES.

Works No.

Type of Turbines

No. of H.P. Turbines

No. of I.P.

No. of L.P.

No. of Astern

Are the Propeller Shafts driven direct by the Turbines or through Gearing?

Is Single or Double Reduction Gear employed?

Diar. of 1st Reduction Pinion

Width

Pitch of Teeth

" 1st " Wheel

Estimated Pressure per lineal inch

Diar. of 2nd Reduction Pinion

Width

Pitch of Teeth

" 2nd " Wheel

Estimated Pressure per lineal inch

Revol. per min. of H.P. Turbines at Full Power

S. H. P.

" " I.P. "

I.P.

" " L.P. "

L.P.

" " 1st Reduction Shaft

" " 2nd

2nd

" " Propeller Shaft

Total Shaft Horse Power

Date of Harbour Trial

„ Trial Trip

Trials run at

Speed on Trial

Knots. Propeller Revols. per min.

S.H.P.

Turbine Spindles forged by

„ Wheels forged or cast by

Reduction Gear Shafts forged by

Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

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TURBO-ELECTRIC PROPELLING MACHINERY.

No. of Turbo-Generating Sets Capacity of each

Type of Turbines employed

Description of Generators

No. of Motors driving Propeller Shafting

Are the Propeller Shafts driven direct by the Motors or through Gearing?

Is Single or Double Reduction Gear employed?

Description of Motors

Diar. of 1st Reduction Pinion

,, 1st ,, Wheel

} Width

Pitch of Teeth

Estimated Pressure per lineal inch

Diar. of 2nd Reduction Pinion

,, 2nd ,, Wheel

} Width

Pitch of Teeth

Estimated Pressure per lineal inch

Revs. per min. of Generators at Full Power

,, Motors ,,

,, 1st Reduction Shaft

,, 2nd ,,

,, Propellers at Full Power

Total Shaft Horse Power

Date of Harbour Trial

,, Trial Trip

Trials run at

Speed on Trial

Knots. Propeller Revs. per min.

S.H.P.

Makers of Turbines

,, Generators

,, Motors

,, Reduction Gear

Turbine Spindles forged by

,, Wheels forged or cast by

Reduction Gear Shafts forged by

,, Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

SHAFTING.

Are the Crank Shafts Built or Solid? *Built.*

No. of Lengths in each *3* Angle of Cranks *120°*

Diar. by Rule *8.59"* Actual *8 7/8"* In Way of Webs *8 7/8"*

" of Crank Pins *8 7/8"* Length between Webs *8 7/8"*

Greatest Width of Crank Webs *1'-4 1/2"* Thickness *5 7/8"*

Least " " " " " "

Dowels *1 1/2"* Length *3 3/4"*

Diar. of *^* In Crank Webs " " " "

" Dowels in Crank Pins *(none.)* Length ☒ Screwed or Plain ☒

No. of Bolts each Coupling *6* Diar. at Mid Length *2 7/8"* Diar. of Pitch Circle *1'-1" 3/8"*

Greatest Distance from Edge of Main Bearing to Crank Web *3/8"*

Type of Thrust Blocks *Adjustable, horse-shoe.*

No. " Rings *4*

Diar. of Thrust Shafts at bottom of Collars *8 7/8"* No. of Collars *4*

" " Forward Coupling " At Aft Coupling *8 7/8"*

Diar. of Intermediate Shafting by Rule *(none.)* Actual " No. of Lengths

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

Diar. of Propeller Shafts by Rule *9.767"* Actual *9 7/8"* At Couplings *8 7/8"*

Are Propeller Shafts fitted with Continuous Brass Liners?

Diar. over Liners *11 1/8"* Length of After Bearings *3'-3 1/2"*

Of what Material are the After Bearings composed?

Lignum Vite

Are Means provided for lubricating the After Bearings with Oil?

No.

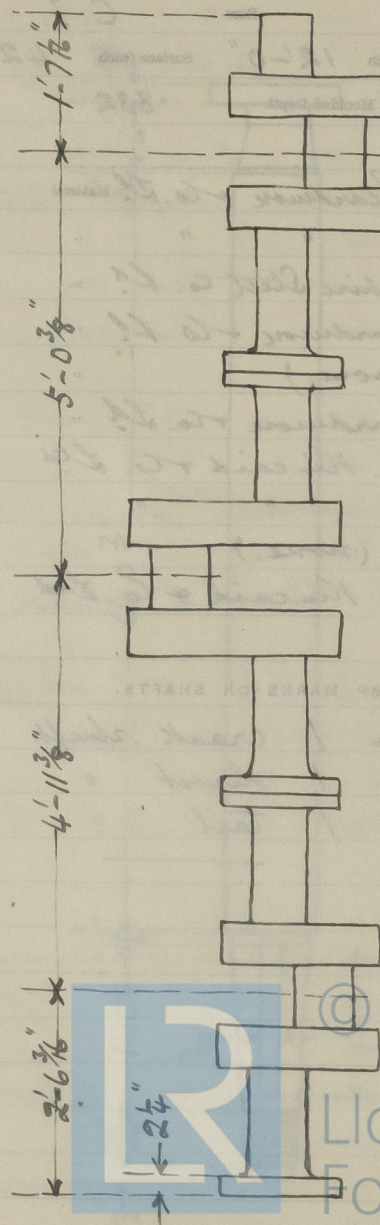
" " to prevent Sea Water entering the Stern Tubes?

"

If so, what Type is adopted?

☒

SKETCH OF CRANK SHAFT.




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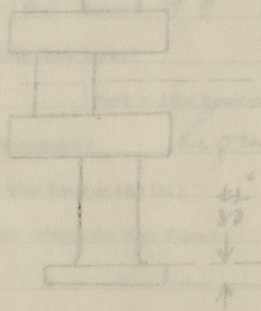
No. of Blades each Propeller *4* Fitted or Solid? *Fitted.*
 Material of Blades *C.I.* Boss *C.I.*
 Diam. of Propellers *11'-6"* Pitch *12'-0"* Surface (each *42* S. ft.
 Coefficient of Displacement of Vessel at $\frac{3}{4}$ Moulded Depth *.832*

Crank Shafts Forged by *Wm. Beardmore & Co. Ltd.* Material *I.S.*
 " Pins " " " " "
 " Webs " *Lanarkshire Steel Co. Ltd.* "
 Thrust Shafts " *Wm. Beardmore & Co. Ltd.* "
 Intermed. " *(none.)* "
 Propeller " *Wm. Beardmore & Co. Ltd.* "
 Crank " Finished by *J.G. Kincaid & Co. Ltd.*
 Thrust " " " "
 Intermed. " *(none.)*
 Propeller " *J.G. Kincaid & Co. Ltd.*

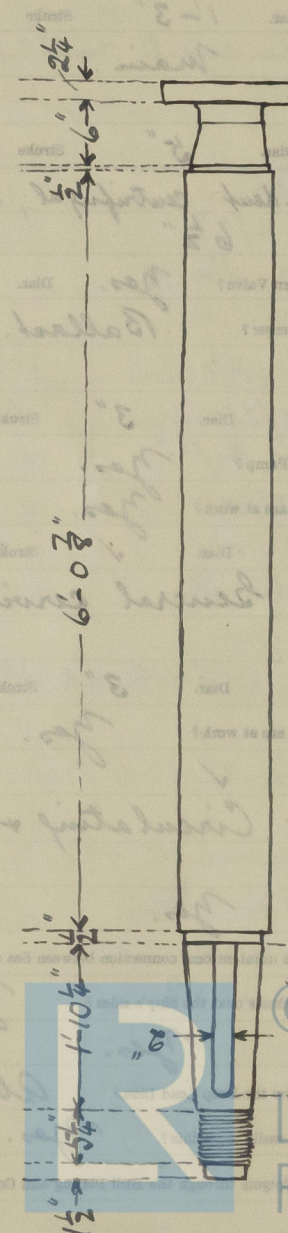
STAMP MARKS ON SHAFTS.

B.C.
 9036
 J.W.H. 
 28/3/24

on 1 crank shaft
 1 Thrust "
 1 tail "



SKETCH OF PROPELLER SHAFT.



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PUMPS, ETC. TO BOILERS

No. of Air Pumps *One* Diar. *1'-3"* Stroke *1'-3"*

Worked by Main or Independent Engines?

Main

No. of Circulating Pumps *One* Diar. *5"* Stroke *5½"*

Type of " *Independent centrifugal, 2'-0" impeller.*

Diar. of " Suction from Sea *6½"*

Has each Pump a Bilge Suction with Non-return Valve?

Yes.

Diar. *4½"*

What other Pumps can circulate through Condenser?

Ballast.

No. of Feed Pumps on Main Engine *2* Diar. *3"* Stroke *1'-3"*

Are Spring-loaded Relief Valves fitted to each Pump?

Yes.

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

Yes.

No. of Independent Feed Pumps ☒ Diar. ☒ Stroke ☒

What other Pumps can feed the Boilers?

General service.

No. of Bilge Pumps on Main Engine *2* Diar. *3"* Stroke *1'-3"*

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

Yes.

No. of Independent Bilge Pumps ☒

What other Pumps can draw from the Bilges?

Circulating & Ballast.

Are all Bilge Suctions fitted with Roses?

Yes.

Are the Valves, etc., so arranged as to prevent unintentional connection between Sea and Bilges?

Yes.

Are all Sea Connections made with Valves or Cocks next the Ship's sides?

Yes.

Are they placed so as to be easily accessible?

Yes.

Are the Discharge Chests placed above or below the Deep Load Line?

Above.

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

Boiler No. 110
Capacity 2000 lbs.
Pressure 180 lbs.
Temp. 250° F.
Test 250° F.
Boiler No. 111
Capacity 2000 lbs.
Pressure 180 lbs.
Temp. 250° F.
Test 250° F.



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BOILERS.

Works No. **611**

No. of Boilers **2** Type **Cylindrical multitubular.**

Single or Double-ended **Single**

No. of Furnaces in each **2**

Type of Furnaces **Deighton**

Date when Plan approved **3/11/23.**

Approved Working Pressure **180 lbs./sq"**

Hydraulic Test Pressure **320 "**

Date of Hydraulic Test **4/4/24.**

" when Safety Valves set **9/7/24.**

Pressure at which Valves were set **184 lbs./sq"**

Date of Accumulation Test **9/7/24**

Maximum Pressure under Accumulation Test **nil**

System of Draught **Natural.**

Can Boilers be worked separately? **Yes.**

Makers of Plates **Steel Co. of Scotland Ltd.**

" Stay Bars " " "

" Rivets " " "

" Furnaces **John Marshall & Co.**

Greatest Internal Diam. of Boilers **12'-4 $\frac{3}{32}$ "**

" " Length " **10'-6"**

Square Feet of Heating Surface each Boiler **1388**

" " Grate " " **43.125**

No. of Safety Valves each Boiler **2** Rule Diam. **2.375"** Actual **2 $\frac{1}{2}$ "**

Are the Safety Valves fitted with Easing Gear? **Yes.**

No. of Pressure Gauges, each Boiler **One** No. of Water Gauges **One**

" Test Cocks " **3** " Salinometer Cocks "

B.C. TEST.

4703

320 lbs.

W.P. 180 lbs.



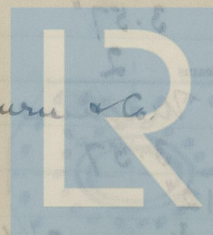
J.W.H.

4/4/24

Joint boiler survey with B. of T. up to & including hydraulic test.

Wrapper plates; - John Spencer & Son, Ltd., Newcastle.

Nuts by Carr & Nichols Ltd., Atherton.



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Are the Water Gauges fitted direct to the Boiler Shells or mounted on Pillars?

Pillars.

Are the Water Gauge Pillars fitted direct to the Boiler Shells or connected by Pipes?

Pipes.

Are these Pipes connected to Boilers by Cocks or Valves?

Cocks.

Are Blow-off Cocks or Valves fitted on Boiler Shells?

Yes, valves.

No. of Strakes of Shell Plating in each Boiler

One

Plates in each Strake

2

Thickness of Shell Plates Approved

1 1/32"

in Boilers

Are the Rivets Iron or Steel?

Steel.

Are the Longitudinal Seams Butt or Lap Joints?

Butt.

Are the Butt Straps Single or Double?

Double.

Are the Double Butt Straps of equal width?

Yes.

Thickness of outside Butt Straps

13/16"

inside

15/16"

Are Longitudinal Seams Hand or Machine Riveted?

Machine.

Are they Single, Double, or Treble Riveted?

Treble.

No. of Rivets in a Pitch

5

Diam. of Rivet Holes

1 3/32"

Pitch

7 3/4"

No. of Rows of Rivets in Centre Circumferential Seams

✓

Are these Seams Hand or Machine Riveted?

✓

Diam. of Rivet Holes

✓

Pitch

✓

No. of Rows of Rivets in Front End Circumferential Seams

2

Are these Seams Hand or Machine riveted?

Machine.

Diam. of Rivet Holes

1 5/32"

Pitch

3.57"

No. of Rows of Rivets in Back End Circumferential Seams

2

Are these Seams Hand or Machine Riveted?

Machine.

Diam. of Rivet Holes

1 5/32"

Pitch

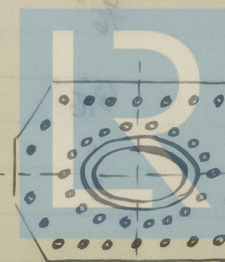
3.57"

Size of Manholes in Shell

16" x 12"

Dimensions of Compensating Rings

3'-0 3/4" x 2'-6 1/4"



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Thickness of End Plates in Steam Space Approved

 $1\frac{3}{32}$ "

" " " " in Boilers

"

Pitch of Steam Space Stays

 $1'-5\frac{1}{2}"$

(1'-5" vertical.)

Diar. " " " " Approved

 $2\frac{3}{4}"$

Threads per Inch

6

" " " " in Boilers

"

"

"

Material of " " "

Steel.

How are Stays Secured?

Nuts & thin washers inside & outside.

Diar. and Thickness of Loose Washers on End Plates

Small $\times \frac{1}{4}"$

" " Riveted " " "

✓

Width " " Doubling Strips " "

✓

Thickness of Middle Back End Plates Approved

 $2\frac{5}{32}"$

" " " " in Boilers

"

Thickness of Doublings in Wide Spaces between Fireboxes

(none.)

Pitch of Stays at

" " " "

 $1'-1\frac{3}{4}"$ (8 $\frac{3}{4}"$ vert.)

Diar. of Stays Approved

 $1\frac{3}{4}"$

Threads per Inch

9

" " in Boilers

"

"

"

Material "

Steel.

Are Stays fitted with Nuts outside?

yes.

Thickness of Back End Plates at Bottom Approved

 $2\frac{7}{32}"$

" " " " in Boilers

"

Pitch of Stays at Wide Spaces between Fireboxes

(various)

Thickness of Doublings in

" "

 $\frac{9}{16}"$

Thickness of Front End Plates at Bottom Approved

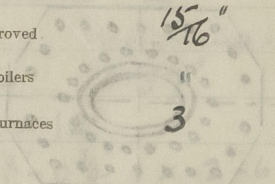
 $1\frac{5}{16}"$

" " " " in Boilers

"

No. of Longitudinal Stays in Spaces between Furnaces

3



Thickness of End Plates Approved

 $1\frac{3}{32}"$

" " " " in Boilers

"

Pitch of Steam Space Stays

 $1'-5\frac{1}{2}"$

(1'-5" vertical.)

Diar. " " " " Approved

 $2\frac{3}{4}"$

Threads per Inch

6

" " " " in Boilers

"

"

"

Material of " " "

Steel.

How are Stays Secured?

Nuts & thin washers inside & outside.

Diar. and Thickness of Loose Washers on End Plates

Small $\times \frac{1}{4}"$

" " Riveted " " "

✓

Width " " Doubling Strips " "

✓

Thickness of Middle Back End Plates Approved

 $2\frac{5}{32}"$

" " " " in Boilers

"

Thickness of Doublings in Wide Spaces between Fireboxes

(none.)

Pitch of Stays at

" " " "

 $1'-1\frac{3}{4}"$ (8 $\frac{3}{4}"$ vert.)

Diar. of Stays Approved

 $1\frac{3}{4}"$

Threads per Inch

9

" " in Boilers

"

"

"

Material "

Steel.

Are Stays fitted with Nuts outside?

yes.

Thickness of Back End Plates at Bottom Approved

 $2\frac{7}{32}"$

" " " " in Boilers

"

Pitch of Stays at Wide Spaces between Fireboxes

(various)

Thickness of Doublings in

" "

 $\frac{9}{16}"$

Thickness of Front End Plates at Bottom Approved

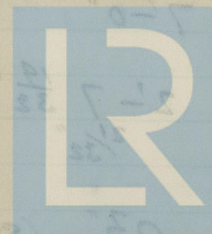
 $1\frac{5}{16}"$

" " " " in Boilers

"

No. of Longitudinal Stays in Spaces between Furnaces

3



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Diar. of Stays Approved

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

Threads per Inch

6

" " in Boilers

Material "

Steel.

Thickness of Front Tube Plates Approved

 $\frac{15}{16}"$

" " " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

 $1-2\frac{1}{4}"$ (8 $\frac{3}{4}"$ vert.)

Thickness of Doublings in " " "

 $\frac{3}{8}"$

" Stay Tubes at " " "

Are Stay Tubes fitted with Nuts at Front End?

Yes.

Thickness of Back Tube Plates Approved

 $\frac{3}{4}"$

" " " " in Boilers

Pitch of Stay Tubes in Back Tube Plates

 $11\frac{1}{4}"$ (mean)(8 $\frac{3}{4}"$ vert.)

" Plain "

 $4\frac{1}{2}"$ (4 $\frac{3}{8}"$ ")

Thickness of Stay Tubes

 $\frac{5}{16}"$

" Plain "

9 w.g.

External Diar. of Tubes

 $3\frac{1}{4}"$

Material "

Lapwelded wrought iron.

Thickness of Furnace Plates Approved

 $\frac{19}{32}"$

" " " " in Boilers

Smallest outside Diar. of Furnaces

 $3'-10\frac{3}{16}"$

Length between Tube Plates

 $7'-0"$

Width of Combustion Chambers (Front to Back)

 $2'-7\frac{19}{32}"$

Thickness of " " Tops Approved

 $\frac{21}{32}"$

" " " " in Boilers

Pitch of Screwed Stays in C.O. Tops

 $9\frac{3}{8}"$ (8 $\frac{1}{4}"$ between girders.)

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Diar. of Screwed Stays Approved

 $1\frac{5}{8}$ "

Threads per Inch

9

" " " in Boilers

Material " "

Steel

Thickness of Combustion Chamber Sides Approved

 $\frac{21}{32}$ "

" " " " in Boilers

Pitch of Screwed Stays in C.O. Sides

 $9\frac{3}{8}$ "(8 $\frac{3}{4}$ " vertically between rows.)

Diar. " " Approved

 $1\frac{5}{8}$ "

Threads per Inch

9

" " " in Boilers

Material " "

Steel.

Thickness of Combustion Chamber Backs Approved

 $\frac{21}{32}$ "

" " " " in Boilers

Pitch of Screwed Stays in C.O. Backs

9"

(8 $\frac{3}{4}$ " vert.)

Diar. " " Approved

 $1\frac{5}{8}$ "

Threads per Inch

9

" " " in Boilers

Material " "

Steel.

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

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

Thickness of Combustion Chamber Bottoms

"

No. of Girders over each Wing Chamber

5

" " " Centre "

Depth and Thickness of Girders

 $8\frac{1}{2}$ " x $5\frac{7}{8}$ "

(double, plates.)

Material of Girders

Steel

No. of Stays in each

2

No. of Tubes, each Boiler

188

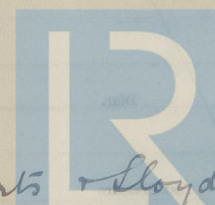
Size of Lower Manholes

16" x 12"

VERTICAL DONKEY BOILERS.

Type	No. of Boilers
Greatest Int. Diam.	
Height of Boiler Crown above Fire Grate	
Height of Boiler Crown First or Second	
Internal Radius of Heated Bores	
Description of Seams in Boiler Crown	
Diam. of River Water	
Height of Tankbox Crown above Fire Grate	
Height of Tankbox Crown First or Second	
Internal Radius of Heated Crown	
No. of Crown Stays	
Thickness of Plates	
Thickness of Plates	
Height of Tankbox at Top	
No. of Water Pipes	
Material of Water Pipes	
Size of Manhole in Shell	
Thickness of Compensation Plate	
Height between each Boiler	

SUPERHEATERS.



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Stewart & Lloyd Ltd. Coatbridge
Doors by Chas. McNeil & Co. Glasgow.

VERTICAL DONKEY BOILERS.

No. of Boilers	Type	
Greatest Int. Diar.		Height
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	Diar.	Material
External Diar. of Firebox at Top	Bottom	Thickness of Plates
No. of Water Tubes	Ext. Diar.	Thickness
Material of Water Tubes		
Size of Manhole in Shell		
Dimensions of Compensating Ring		
Heating Surface, each Boiler	Grate Surface	

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 each Superheater	Diar.
Are " " fitted with Lasing Gear?	
Date of Hydraulic Test	Test Pressure
Date when Safety Valves set	Pressure on Valves

MAIN STEAM PIPES.

No. of Pipes	
Material	
External, Width or Diameter	
Internal Diar.	
Thickness	
How are Flanges secured?	
Date of Hydraulic Test	
Test Pressure	
No. of Pipes	
Material	
External, Width or Diameter	
Internal Diar.	
Thickness	
How are Flanges secured?	
Date of Hydraulic Test	
Test Pressure	



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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.	1	Type	Surface	(Jot No 2337)
Makers			Holden & Brooke Ltd	Manchester.
Working Pressure	180	Test Pressure	Shell 50 cids 450	Date of Test 30/1/24.

FEED WATER FILTERS.

No.	1	Type	Low-pressure	Size
Makers			Davis & Horn Ltd	Johnstone
Working Pressure	—	Test Pressure	—	Date of Test —

STEERING ENGINE.

No.	1	Type	Steam engine with telemotor gear.
Makers			Hastie Greenock.

LIST OF DONKEY PUMPS.

Ballast, vert. dup. 9" and 13" x 10" (Kieraid)
 suction - Sea, Tanks, Bilges, & hold flooding connection.
 discharges - O'board, Tanks, & Condenser.

Gen. Service, vert. dup. 6" and 4 1/4" x 6" (Dawson & Downie)
 suction - Sea, Hotwell, E.R. tank, Condenser, Boilers,
 & Circul. discharge.
 discharges - O'board, Boilers, Heaters, Deck, & E.R. hose.

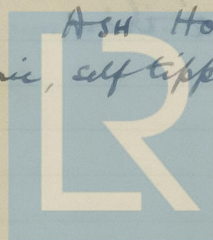
Circulating, centrif. 5" x 5 1/2" (6 1/2" suet. & disch.) by
 H. Watson & Sons.
 suction - Sea, Bilge injection
 discharges - Condenser.

Sanitary, horiz. dup. 4 1/2" and 2 3/4" x 4" (Dawson
 & Downie)
 suction - Sea, E.R. tank.
 discharges - Sanitary tank.

INJECTOR

size 9, Brooke's pat. by Holden & Brooke.

ASH HOIST
 7' atmospheric, self tipping bucket, by Crompton.



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SPARE GEAR

No. of Top End Bolts. 2	No. of Bot. End Bolts. 2	No. of Cylinder Cover Studs 6
" Coupling Bolts 6	" Main Bearing Bolts 2	" Valve Chest " 6
" Junk Ring ^{Slads} 3	" Feed Pump Valves 1 set with seats	" Bilge Pump Valves 1 set with seats
" H.P. Piston Rings	" I.P. Piston Rings	" L.P. Piston Rings
" " Springs	" " Springs	" " Springs
" Safety Valve " 1	" Fire Bars $\frac{1}{2}$ set for 1 boiler with wing bars	" Feed Check Valves 1 main
" Piston Rods	" Connecting Rods	" Valve Spindles
" Air Pump Rods	" Air Pump Buckets	" Air Pump Valves $\frac{1}{2}$ set
" Cir. "	" Cir. "	" Cir. "
" Crank Shafts	" Crank Pin Bushes	" Crosshead Bushes
" Propeller Shafts	" Propellers	" Propeller Blades 4 c.i.
" Boiler Tubes 3 plain	" Condenser Tubes 3	" Condenser Ferrules 20

OTHER ARTICLES OF SPARE GEAR:—

24 assorted bolts + nuts.

6 gauge glass.

12 rubber rings for same.

2 sheets tin.

1 " Muntz metal.

1 set feed doukey water valves.

1 " ballast " " "

1 " Sanitary pump " " "

1 escape valve spring of each size fitted.

Assorted bar & plate iron.

REFRIGERATORS

} Included in assorted bolts.

and 1 aux.



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REFRIGERATORS.

No. of Machines

Capacity of each

Makers

Description

No. of Steam Cylinders, each Machine

No. of Compressors

No. of Cranks

Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines or Independently

System of Refrigeration

„ Insulation

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

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

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

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

Date of Test under Working Conditions

RESULTS OF TRIALS.

COMPARTMENT.	Temp. at beginning of Trial.	Temp. at end of Trial.	Time required to obtain this Result.	Rise of Temp. after hours.
Machine Room	68	70	10	2
Engine Room	68	70	10	2
Boiler Room	68	70	10	2
Galley	68	70	10	2
Cabin	68	70	10	2
Deck	68	70	10	2
Store Room	68	70	10	2
Engine Room	68	70	10	2
Boiler Room	68	70	10	2
Galley	68	70	10	2
Cabin	68	70	10	2
Deck	68	70	10	2
Store Room	68	70	10	2

Articles of Spare Gear for Refrigerating Plant carried on board:—



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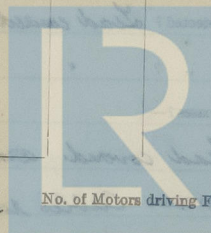
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ELECTRIC LIGHTING.

Installation Fitted by *The Sunderland Forge Co Ltd*
 No. and Description of Dynamos *One - multipolar Comp. Wound Dynamo.*
 Makers of Dynamos *The Sunderland Forge & Eng. Co Ltd*
 Capacity " *68* Amperes, at *110* Volts, *375* Revols. per Min.
 Current Alternating or Continuous *Continuous*
 Single or Double Wire System *Double wire system.*
 Position of Dynamos *Starboard side engine-room.*
 " Main Switch Board " " " "
 No. of Circuits to which Switches are provided on Main Switch Board *Five*
 Particulars of these Circuits:—

Circuit.	Number of Lights.	Candle Power.	Current Required. Amps.	Size of Conductor.	Current Density.	Conductivity of Conductor.	Insulation Resistance per Mile.
1. <i>Eng. & B. Rooms.</i>	<i>14.</i>	<i>16</i>	<i>7.7</i>	<i>7/064</i>	<i>342</i>	<i>100%</i>	<i>25.0 meg.</i>
2. <i>Forenoon Comp.</i>	<i>38</i>	<i>16</i>	<i>24.75</i>	<i>7/064</i>	<i>1100</i>	<i>100%</i>	<i>"</i>
3. <i>Nav. Lds Indie.</i>	<i>5</i>	<i>32</i>	<i>5.5</i>	<i>7/064</i>	<i>344.5</i>	<i>100%</i>	<i>"</i>
4. <i>Aft room - Comp.</i>	<i>54</i>	<i>16</i>	<i>32.45</i>	<i>7/064</i>	<i>1445</i>	<i>100%</i>	<i>"</i>
5. <i>Spare.</i>							

Total No. of Lights *111.* No. of Motors driving Fans, &c. *Two* No. of Heaters *Two*
 Current required for Motors and Heaters —



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

1 in wheel house for nav. Lgt. 5 switches

1 " Eng. room " Eng. & B. rooms

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.

all stranded

S.W.G.,

Largest, No.

S.W.G.

How are Conductors in Engine and Boiler Spaces protected?

Lead covered, armoured & braided

" Saloons, State Rooms, &c.,

" ?

"

"

"

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp

Lead covered, armoured & braided

(2) " " passing through Bunkers or Cargo Spaces

Cables run in galv

(3) " " Deck Beams or Bulkheads

Bushed holes in

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?

1 megohm

Ohms.

Is the Installation supplied with a Voltmeter?

Yes.

" " " an Ampere Meter?

Yes.

Date of Trial of complete Installation

11/7/24

Duration of Trial

12 hrs.

Have all the requirements of Section 42 been satisfactorily carried out?

Yes.



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W. I. pipe

W. T. glands

GENERAL CONSTRUCTION.

Have the Machinery and Boilers been constructed in accordance with the requirements of the Rules and the

Approved Plans? *Yes.*

If not, give details of the points of difference, and state when these 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.

"*DRUMAHOE*"

as ascertained by ^{us} _{me} from personal examination

G. Wood Harrington.
Geo. W. Luke.
Engineer Surveyor to the British Corporation for the
Survey and Registry of Shipping.

Fees—

MAIN BOILERS.

		£	s.	d.
H.S.	Sq. ft.	:	:	:
G.S.	"	:	:	:

DONKEY BOILERS.

H.S.	Sq. ft.	:	:	:
G.S.	"	:	:	:
	£	:	:	:

ENGINES.

L.P.O.	Cub. ft.	:	:	:
	£	:	:	:
Testing, &c. ...		:	:	:
	£	:	:	:
Expenses ...		:	:	:
Total ...	£	:	:	:

It is submitted that this Report be approved,

Just Barr for Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the

13th July 1924

Fees advised

Fees paid



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Page -

MALE DOUBLES

Sd. R.

H.S.

DOUBLY DOUBLES

Sd. R.

H.S.

G.S.

ENGINES

Sd. R.

L.P.O.

Testing, &c.

Expenses

Total

It is submitted that this Report be approved.

This survey

Approved by the Committee for the Class of M.B.S. on the 13th day of 1924

Not advised

Not paid

Visits.

8/11/23

12 "

30 "

11/12/23.

18 "

27 "

10/1/24

18 "

24 "

30 "

5/2/24.

11 "

14 "

18 "

20 "

22 "

4/3/24.

10 "

11 "

13 "

17 "

20 "

28 "

31 "

4/4/24

10 "

15/4/24.

18 "

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30/4/24.

5/5/24.

12 "

19 "

22 "

29 "

3/6/24

5 "

9 "

19 "

24/6/24 Barry

2/7/24 "

9/7/24 "

10/7/24 "

12/7/24 Ardrossan.



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