

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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No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. 1774 No. in Register Book 3064

Received at Head Office 24<sup>th</sup> July 1924

Surveyor's Report on the New Engines, Boilers, and Auxiliary  
Machinery of the ~~Single Screw~~ <sup>Single Screw</sup> ~~Steam~~ <sup>Screw</sup> 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"** Screwed 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. A. 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

**Skelmarie**

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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## 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

Diam. of 1st Reduction Pinion	}	Width	Pitch of Teeth
" 1st " Wheel			

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion	}	Width	Pitch of Teeth
" 2nd " Wheel			

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.

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## 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<sup>5</sup>/<sub>8</sub>"* In Way of Webs *8<sup>7</sup>/<sub>8</sub>"*

" of Crank Pins *8<sup>5</sup>/<sub>8</sub>"* Length between Webs *8<sup>5</sup>/<sub>8</sub>"*

Greatest Width of Crank Webs *1'-4<sup>1</sup>/<sub>2</sub>"* Thickness *5<sup>5</sup>/<sub>8</sub>"*

Least " " " " " "

Diar. of *Dowels* in Crank Webs *1<sup>1</sup>/<sub>2</sub>"* Length *3<sup>3</sup>/<sub>4</sub>"*

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

No. of Bolts each Coupling *6* Diar. at Mid Length *2<sup>7</sup>/<sub>16</sub>"* Diar. of Pitch Circle *1'-1<sup>1</sup>/<sub>8</sub>"*

Greatest Distance from Edge of Main Bearing to Crank Web *3<sup>3</sup>/<sub>8</sub>"*

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

No. " Rings *4*

Diar. of Thrust Shafts at bottom of Collars *8<sup>5</sup>/<sub>8</sub>"* No. of Collars *4*

" " Forward Coupling " At Aft Coupling *8<sup>5</sup>/<sub>8</sub>"*

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<sup>7</sup>/<sub>8</sub>"* At Couplings *8<sup>5</sup>/<sub>8</sub>"*

Are Propeller Shafts fitted with Continuous Brass Liners?

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

Of what Material are the After Bearings composed?

*Lignum Vite*

Are Means provided for lubricating the After Bearings with Oil?

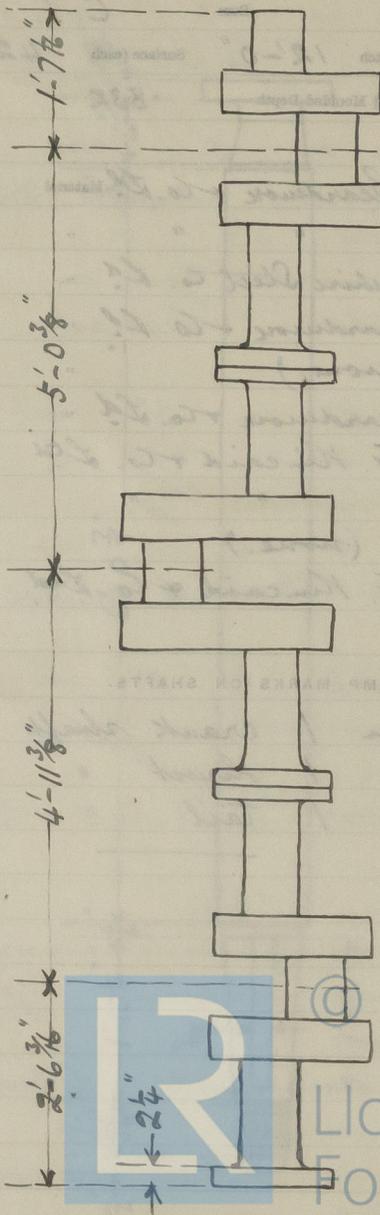
*No.*

" " to prevent Sea Water entering the Stern Tubes?

*"*

If so, what Type is adopted?

## SKETCH OF CRANK SHAFT.



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*

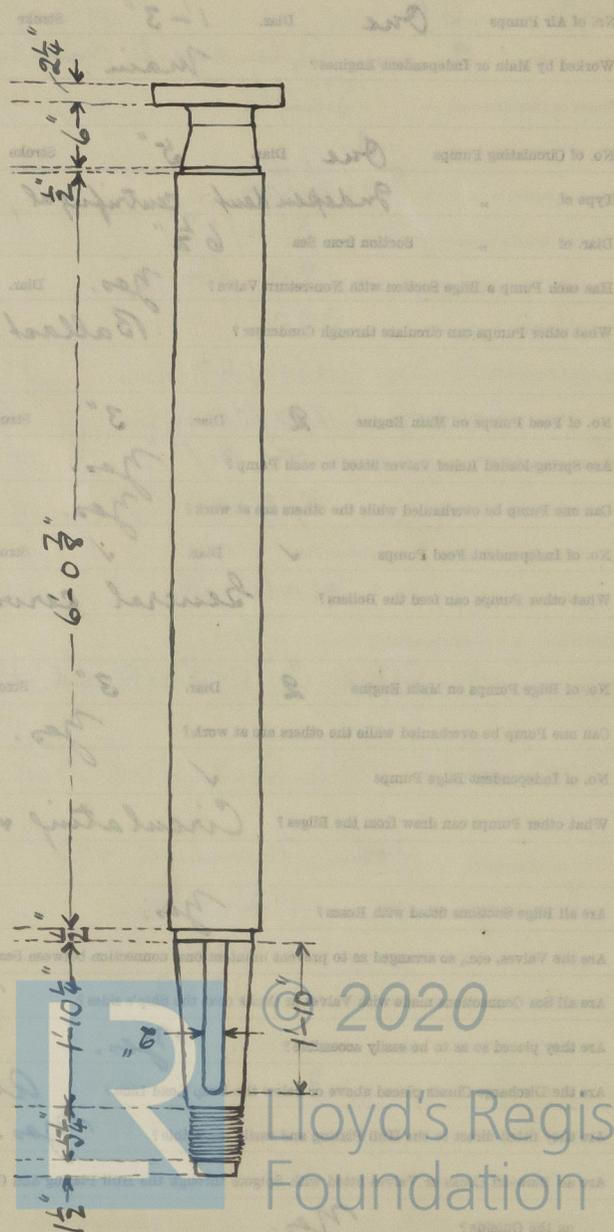
Crank Shafts Forged by *Wm Beardmore & Co. Ltd.* Material *I.S.*  
 " Pins " " " " "  
 " Webs " *Lanarkshire Steel Co. Ltd.* "  
 Thrust Shafts " *Wm Beardmore & Co. Ltd.* "  
 Intermed., " *(none.)* "  
 Propeller " " *Wm Beardmore & Co. Ltd.* "  
 Crank " Finished by *J.G. Kincaid & Co. Ltd.*  
 Thrust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



## PUMPS, ETC. OF SHIP

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 *5 1/2"*Type of " *Independent centrifugal, 2'-0" impeller.*Diar. of " Suction from Sea *6 1/2"*

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

*Yes.*Diar. *4 1/2"*

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

No. of Boilers *2*  
 Type of Boilers *Compound*  
 No. of Tubes in each *2*  
 Type of Tubes *Vertical*  
 Date when last approved *25/11/8*  
 Approved Working Pressure *180 lbs. 10*  
 Original Working Pressure *200*

B.C. TEST  
 4703  
 320 W  
 W.P. 180 W  
 J.N.H.  
 4/4/84

Date of last test *4/4/84*  
 when done *4/4/84*  
 Pressure at which tested *180 lbs.*  
 Date of Accreditation Test *4/4/84*  
 Name of Engineer under Accreditation Test *J.N.H.*  
 System of Heating *Vertical*  
 Can boiler be worked safely?  
 Name of Boiler *Vertical*  
 Name of Maker *Vertical*  
 Name of Engineer *Vertical*  
 Date of last test *4/4/84*  
 when done *4/4/84*  
 Pressure at which tested *180 lbs.*  
 Date of Accreditation Test *4/4/84*  
 Name of Engineer under Accreditation Test *J.N.H.*  
 System of Heating *Vertical*  
 Can boiler be worked safely?  
 Name of Boiler *Vertical*  
 Name of Maker *Vertical*  
 Name of Engineer *Vertical*



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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 <sup>3</sup>/<sub>32</sub>"

" " 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 <sup>1</sup>/<sub>2</sub>"

Are the Safety Valves fitted with Basing 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 & Sons, 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"*

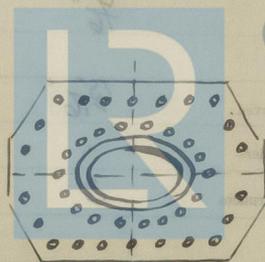
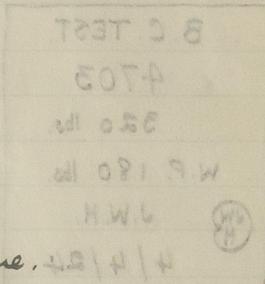
No. of Rows of Rivets in Back End Circumferential Seams *2*

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 "

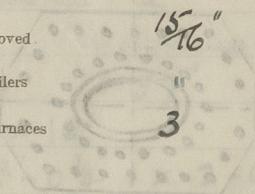
Pitch of Stays at Wide Spaces between Fireboxes (various)

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



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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 " " "  
 " 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  $2\frac{1}{32}"$   
 " " " " in Boilers " "  
 Pitch of Screwed Stays in C.O. Tops  $9\frac{3}{8}"$  ( $8\frac{1}{4}"$  between girders.)

Thickness of Combustion Chamber Plates Approved  $\frac{1}{2}"$   
 " " " " in Boilers " "  
 Pitch of Screwed Stays in C.O. Sides  $8\frac{1}{2}"$   
 Diar. " Approved  $2\frac{1}{2}"$   
 " " in Boilers " "  
 Material " Steel.

Thickness of Combustion Chamber Plates Approved  $\frac{1}{2}"$   
 " " " " in Boilers " "  
 Pitch of Screwed Stays in C.O. Sides  $8\frac{1}{2}"$   
 Diar. " Approved  $2\frac{1}{2}"$   
 " " in Boilers " "  
 Material " Steel.

Are all Screwed Stays fitted with Nuts inside C.O.?  
 Thickness of Combustion Chamber Bottoms  
 % of Girder over each Wing Girder  
 Depth and Thickness of Girders  
 Material of Girders  
 % of Stays in each

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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.

Thickness of Combustion Chamber Bottoms  $\frac{3}{4}$ "

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.

No. of Boilers

Type

Greatest Int. Diam.

Height of Boiler Crown above Top Flange

Internal Radius of Boiler Crown

Description of Beams in Boiler Crown

Diam. of Rivet Hole

Height of Vertical Crown above Top Flange

Internal Radius of Vertical Crown

Thickness of Plates

No. of Crown Stays

Internal

Diam.

External Diam. of Top Box at Top

Bottom

Thickness

No. of Water Tubes

Internal of Water Tubes

Size of Manhole in Shell

Thickness of Compensation Ring

Height between each Boiler

Grate Surface

## SUPERHEATERS.

Description of Superheaters

No. of Superheaters

When boilers are connected to superheaters  
One Superheater for each boiler and one for each  
No. of Safety Valves on each superheater

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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 Easing Gear?	
Date of Hydraulic Test	Test Pressure
Date when Safety Valves set	Pressure on Valves

## MAIN STEAM PIPES.

No. of Pipes			
Material			
Joined, Welded or Seamed?			
Internal Diar.			
Thickness			
How are Flanges secured?			
Date of Hydraulic Test			
Test Pressure			
No. of Joints			
Material			
Joined, Welded or Seamed?			
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.	Type	Makers	Working Pressure	Test Pressure	Date of Test
1	Surface	Holden & Brooke Ltd, Manchester.	180	Shell 50 cals 450	30/1/24.

(Jdn No 2337)

## FEED WATER FILTERS.

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

## STEERING ENGINE.

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

## LIST OF DONKEY PUMPS.

Ballast, vert. dup. 9" and 13" x 10" (Kinnaird)  
 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.

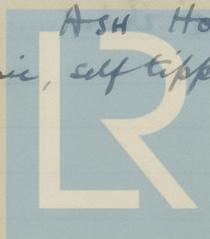
Circulating, centrif. 5" x 5 1/2" (6 1/2" suet. & disch.) by  
 H. Watson & Sons.  
 suction - Sea, Bilge injection  
 discharge - Condenser.

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

## INJECTOR

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

7' atmospheric, self tipping bucket, by Crompton.



## 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 <sup>Slats</sup>	3	" Feed Pump Valves	1 set with seats.	" Bilge Pump Valves	1 set with seats.
" H.P. Piston Rings		" L.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 and 1 aux.
" 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, &amp;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 in Operation				
Capacity				
Character of Refrigerating Machine				
Weight of Brine in Working				
Position of Apparatus				
State of Brine				
Particulars of which Particulars				
Signature of Chief Officer				
Rank				
By A. Brown				
By A. Brown				
By A. Brown				
By A. Brown				
By A. Brown				

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



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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

Position	No. of Switches
Wheel house for Nav. Lgt.	5
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, armored & braided*

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

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp *Lead covered, armored & 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 <sup>us</sup> <sub>me</sub> from personal examination

*Glenn 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.C.	Cub. ft.	:	:	:
		£	:	:
Testing, &c. ...		:	:	:
		£	:	:
Expenses ...		:	:	:
Total ...		£	:	:

It is submitted that this Report be approved,

*Jack Barr* for Chief Surveyor.

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

*13<sup>th</sup> July 1924*

Fees advised

Fees paid



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Post-

H.S.

G.S.

L.P.O.

Lectur. &amp;c.

Expenses

DORREY BOLLERS

EMERSON

L.P.O.

Lectur. &amp;c.

Expenses

Total

It is submitted that this Report be approved.

Approved by the Committee for the Class of M.B.S. on the 13<sup>th</sup> July 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 "

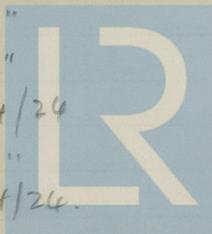
31 "

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 Savvy

2/7/24 "

9/7/24 "

10/7/24 "

12/7/24 Ardrossan.



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