

No. 2391

10/277

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 2420 No. in Register Book 3853

S.S.

"Rockabill"

Makers of Engines

D. & W. Henderson & Co. Ltd.

Works No.

910 m.

Makers of Main Boilers

Same.

Works No.

"

Makers of Donkey Boiler

Bochran & Co. (Aman) Ltd.

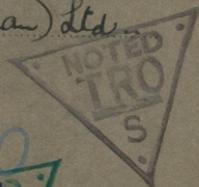
Works No. 11922.

MACHINERY.



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No. 2391

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. No. in Register Book

S.S. "Rockabill."

Makers of Engines D. & W. Henderson & Co. Ltd.

Works No. 910 M.

Makers of Main Boilers (same.)

Works No. "

Makers of Donkey Boiler Cochran & Co. (Annan) Ltd.

Works No.

MACHINERY.



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No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 22 No. in Register Book

Received at Head Office 10th February 1931

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the ~~Single~~ Screw Steamer

"Rockabil".

Official No. 161940 Port of Registry Glasgow.

Registered Owners The Clyde Shipping Company Limited,

Engines Built by D. & W. Henderson & Company Limited,
at Finnieston, Glasgow.

Main Boilers Built by same firm
at " place.

Donkey Cochran & Company Limited,
" at Annan.

Date of Completion 30/1/31.

First Visit 7/7/30. Last Visit 30/1/31. Total Visits 57.

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TURBINE ENGINES.

Works No. Type of Turbines

No. of H.P. Turbines No. of L.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?

Diam. of 1st Reduction Pinion

1st Wheel Width Pitch of Teeth

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion

2nd Wheel Width Pitch of Teeth

Estimated Pressure per lineal inch

Revs. per min. of H.P. Turbines at Full Power S.L.P.

I.P. " " " "

L.P. " " " "

1st Reduction Shaft @ 1800

2nd " " " "

Propeller Shaft

Total Shaft Horse Power

Date of Harbour Trial

Trial Trip

Trials run at

Speed on Trial Knots Propeller Revs. 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.

No. of Turbo-Electric Machinery Capacity of each

Type of Turbine engines

Description of connection

Turbine Spindles forged by

Wheels forged or cast by

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

Is Single or Double Reduction Gear employed?

Description of Astern

DESCRIPTION OF INSTALLATION.

Diam. of 1st Reducing Pinion

1st Wheel " " " "

Estimated Pressure per lineal inch

Diam. of 2nd Reducing Pinion

2nd Wheel " " " "

Estimated Pressure per lineal inch

Revs. per min. of Motors at Full Power

" " " " " "

" " " " " "

Trials run at

Speed on Trial Knots Propeller Revs. per min. S.H.P.

Date of Harbour Trial

Trials run at

Speed on Trial Knots Propeller Revs. per min. S.H.P.



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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

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 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 Revol. 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 *2* Angle of Cranks *120°*

Diar. by Rule *10.98"* Actual *11 1/2"* In Way of Webs *11 1/2"*

" of Crank Pins *11 1/2"* Length between Webs *1'-1 3/4"*

Greatest Width of Crank Webs *1'-9"* Thickness *8"*

Least " " *1'-9"* " *8"*

Diar. of ~~webs~~ *Dowels* in Crank Webs *1 3/4"* Length *5"*

" Dowels in Crank Pins *1 1/4"* Length Screwed or Plain *Plain.*

No. of Bolts each Coupling *6* Diar. at Mid Length *2 3/4"* Diar. of Pitch Circle *1'-5"*

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

Type of Thrust Block *Mitchell.*

No. " Rings *One.*

Diar. of Thrust Shafts at bottom of Collars *11 1/2"* No. of Collars *One*

" " Forward Coupling *11 1/2"* At Aft Coupling *11 1/2"*

Diar. of Intermediate Shafting by Rule *10.45"* Actual *11"* No. of Lengths *3*

No. of Bolts, each Coupling *6* Diar. at Mid Length *2 3/4"* Diar. of Pitch Circle *1'-5"*

Diar. of Propeller Shaft by Rule *11.61"* Actual *12"* At Coupling *1'-0 1/8"*

Is Propeller Shaft fitted with Continuous Brass Liner? *Yes.*

Diar. over Liner *1'-1 1/2"* Length of After Bearing *4'-0"*

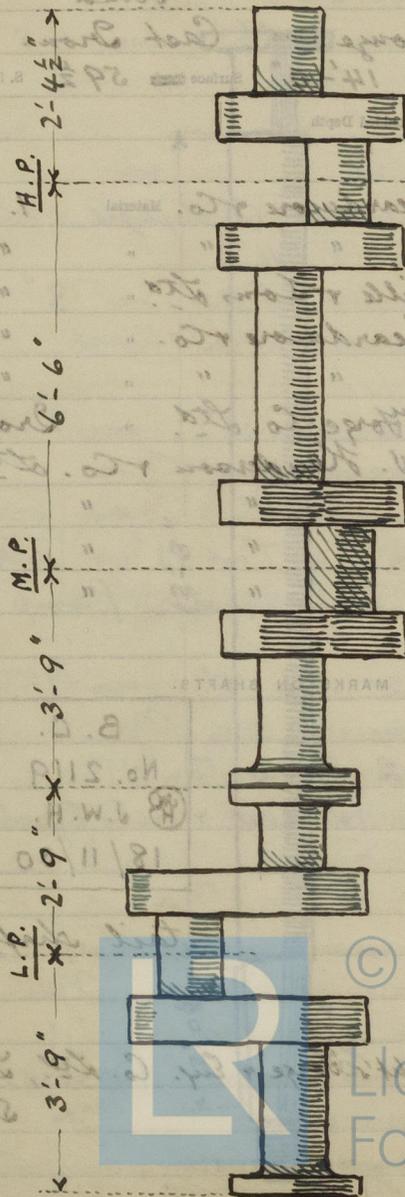
Of what Material are the After Bearings composed? *Lignum Vitae*

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.



B.C.
No. 5117
E. 2.
50/10/30

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No. of Blades ~~4~~ Propeller **4** Fitted or Solid? **Fitted**
 Material of Blades **Mang. Bronze** Boss **Cast Iron**
 Diam. of Propeller **14'-0"** Pitch **14'-0"** Surface **59 1/2** S. ft.)
 Coefficient of Displacement of Vessel at 3/4 Moulded Depth

Crank Shafts Forged by **Wm Beardmore & Co.** Material **I. S.**
 ,, Pins ,, " " " " "
 ,, Webs ,, **D. Colville & Sons Ltd** " "
 Thrust Shafts ,, **Wm Beardmore & Co.** " "
 Intermed. ,, " " " " "
 * Propeller ,, **Langley Forge Co. Ltd** " **Iron**
 Crank ,, Finished by **D. W. Henderson & Co. Ltd**
 Thrust ,, " " " "
 Intermed. ,, " " " "
 Propeller ,, " " " "

STAMP MARKS ON SHAFTS.

B. C.
 No. 2117
 E. S. (E)
 20/10/30

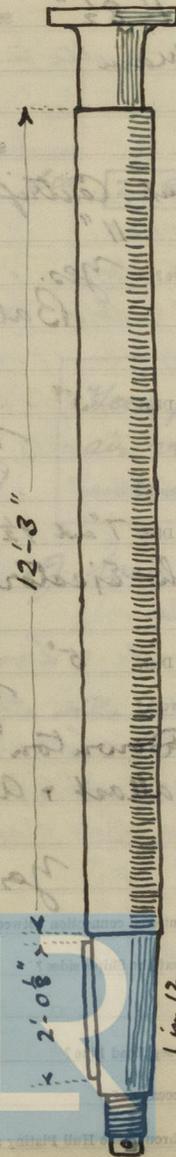
B. C.
 No. 2119
 J. W. H.
 18/11/30

One Thrust &
 3 intermediate.

tail shaft.

* Sub. contracted to Wright's Forge & Eng. Co. Ltd., Lipton, Staffs.

SKETCH OF PROPELLER SHAFT.



2'-08" x 1 in 12 Taper.

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PUMPS, ETC.

No. of Air Pumps *One* Diar. *1'-8 1/2"* Stroke *1'-8"*
 Worked by Main or Independent Engines? *Main*

No. of Circulating Pumps *One* Diar. Stroke
 Type of *Independent Centrifugal, made by*
 Diar. of *"* Suction from Sea *"*
 Has each Pump a Bilge Suction with Non-return Valve? *Yes.* Diar. *8"*
 What other Pumps can circulate through Condenser? *Ballast*

No. of Feed Pumps on Main Engine *2* Diar. *5"* Stroke *1'-8"*
 Are Spring-loaded Relief Valves fitted to each Pump? *Yes.*
 Can one Pump be overhauled while the others are at work? *"*

No. of Independent Feed Pumps *2* Diar. *7" and 9 1/2"* Stroke *1'-9"*
 What other Pumps can feed the Boilers? *Ash Ejector Pump*

No. of Bilge Pumps on Main Engine *2* Diar. *5"* Stroke *1'-8"*
 Can one Pump be overhauled while the others are at work? *Yes.*

No. of Independent Bilge Pumps *2 Downton*
 What other Pumps can draw from the Bilges? *Ballast + Ash Ejector*

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? *"*
 Are the Discharge Chests placed above or below the Deep Load Line? *Below.*
 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

Drysdale & Co. Ltd. 22867 (Single cyl. steam eng.)

16 tons/hour.

1/98004 forward
2/98004 aft.

by G. J. Weir Ltd.

16 tons/hour

Feed pump barrels, chests, & air vessels tested at 463 lb/di² and stamped NH 24/11/30.



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BOILERS

Works No. 910 m.

No. of Boilers 2 Type Cyl. multi tubular

Single or Double-ended Single

No. of Furnaces in each 3 (COAL.)

Type of Furnaces Deighton

Date when Plan approved 20/6/30.

Approved Working Pressure 185 lb/□"

Hydraulic Test Pressure 327½ lb/□" (say 330 lb.)

Date of Hydraulic Test Starboard 25/11/30; Port 2/12/30

" when Safety Valves set 26/12/30.

Pressure at which Valves were set 187 lb/□" (R.L.G.)

Date of Accumulation Test 26/12/30

Maximum Pressure under Accumulation Test 187 lb/□" (R.L.G.)

System of Draught F.D., c.a. (Howden's)

Can Boilers be worked separately? Yes.

Makers of Plates David Colville & Sons Ltd.

Iron Stays, Best Yorkshire Iron Ltd., Bradford

Steel Stay Bars David Colville & Sons Ltd.

" Rivets John Marshall & Co. (Motherwell) Ltd.

" Furnaces North West Rivet, Bolt & Nut Factory Ltd.

Greatest Internal Diam. of Boilers 15'-0"

" " Length " 13'-0"

Square Feet of Heating Surface each Boiler 2504.226

" " Grate " " 61.875

No. of Safety Valves each Boiler 2 Rule Diam. 2.23 Actual 2¼" (High lift)

Are the Safety Valves fitted with Easing Gear? Yes.

No. of Pressure Gauges, each Boiler " No. of Water Gauges 2

" Test Cocks " " Salinometer Cocks

- STARBOARD -

- PORT. -

B.C. TEST
No. 5463
328 lb.
W.P. 185 lb.
J.W.H.
25/11/30

B.C. TEST
No. 5464
etc.
etc.
J.W.H.
etc.
2/12/30.

Jan 8889 Single cyl. steam eng. 10936 by
James Howden & Co. Ltd.

Compression Rings; -

Port boiler. Starboard boiler.

Aft ¼" (full) Aft 3/8"

Fore? do. Fore? 1/32" (R.L.G.)



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

Pillars.
Direct.

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

Are these Pipes connected to Boilers by Cocks or Valves?

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

Valves on back ends?

No. of Strakes of Shell Plating in each Boiler

One

Plates in each Strake

2

Thickness of Shell Plates Approved

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

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

$\frac{31}{32}$ "

inside

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

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

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

Pitch

$9 \frac{1}{4}$ "

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

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

Pitch

3.92"

No. of Rows of Rivets in Back End Circumferential Seams

2

Are these Seams Hand or Machine Riveted?

Machine

Diam. of Rivet Holes

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

Pitch

3.92"

Size of Manholes in Shell

16" x 12"

Dimensions of Compensating Rings

3'-6" x 3'-0" x $1 \frac{9}{32}$ "

Water gauge

pillar.

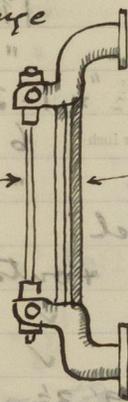
(4 off, G.M.)

Gauge glass

solid



(section)



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Thickness of End Plates in Steam Space Approved

1 3/16"

" " " " in Boilers

"

Pitch of Steam Space Stays

1'-9" x 1'-3 1/2"

Diar. " " " Approved

2 7/8"

Threads per Inch

6

" " " " in Boilers

"

"

Material of " " "

Steel.

How are Stays Secured?

Nuts inside + outside. (Thin loose washers.)

Diar. and Thickness of Loose Washers on End Plates

✓

" " Riveted " "

✓

Width " " Doubling Strips

2'-9" x 2'-3 1/2" x 13/16" in way of

Thickness of Middle Back End Plates Approved

✓

" " " " in Boilers

✓

Thickness of Doublings in Wide Spaces between Fireboxes

✓

Pitch of Stays at

1'-2 3/4"

Diar. of Stays Approved

1 7/8"

Threads per Inch

9

" " in Boilers

"

"

Material "

Low moor tested iron.

Are Stays fitted with Nuts outside?

Yes.

Thickness of Back End Plates at Bottom Approved

7/8"

" " " " in Boilers

"

Pitch of Stays at Wide Spaces between Fireboxes

1'-2 3/4"

Thickness of Doublings in " "

✓

Thickness of Front End Plates at Bottom Approved

1 1/4"

" " " " in Boilers

"

No. of Longitudinal Stays in Spaces between Furnaces

3 round each

of 2 bottom manholes.

stop valve, on top back-end plate.

(To Hook "F")

(All c.c. stays tested to 2 1/2 tons/sq. in.)



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one $2\frac{1}{4}$ "
 two 2" Threads per Inch 6
 " " in Boilers do. "
 Material " Steel.
 Thickness of Front Tube Plates Approved $1\frac{1}{64}$ "
 " " " " in Boilers "
 Pitch of Stay Tubes at Spaces between Stacks of Tubes $1'-2\frac{3}{4}" \times 8"$
 Thickness of Doublings in " " " 1"
 " Stay Tubes at " " " $\frac{3}{8}"$
 Are Stay Tubes fitted with Nuts at Front End Only 8 top corner wide space
 (76" thick).
 Thickness of Back Tube Plates Approved $1\frac{3}{16}"$
 " " " in Boilers "
 Pitch of Stay Tubes in Back Tube Plates $1'-0" \times 8"$
 " Plain " $4" \times 4"$
 Thickness of Stay Tubes $5\frac{1}{16}"$
 " Plain " 8 W.G.
 External Diam. of Tubes $2\frac{3}{4}"$
 Material " Lapwelded iron.
 Thickness of Furnace Plates Approved $5\frac{1}{8}"$
 " " " in Boilers "
 Smallest outside Diam. of Furnaces $3'-10\frac{1}{4}"$
 Length between Tube Plates $8'-0"$
 Width of Combustion Chambers (Front to Back) $3'-11\frac{1}{2}"$ over plates.
 Thickness of " " Tops Approved $5\frac{1}{8}"$
 " " " in Boilers "
 Pitch of Screwed Stays in C.O. Tops $9" \times 7"$

(parallel.)

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Diar. of Screwed Stays Approved $1\frac{3}{4}$ " Threads per Inch 9
 " " " in Boilers " "
 Material " " Lowmoor iron.

Thickness of Combustion Chamber Sides Approved $\frac{5}{8}$ "
 " " " " in Boilers " "
 Pitch of Screwed Stays in C.C. Sides $9" \times 8"$
 Diar. " " Approved $1\frac{3}{4}$ " Threads per Inch 9
 " " " in Boilers " "
 Material " " Lowmoor iron.

Thickness of Combustion Chamber Backs Approved $\frac{5}{8}$ "
 " " " " in Boilers " "
 Pitch of Screwed Stays in C.C. Backs $8\frac{1}{4}$ "
 Diar. " " Approved $1\frac{3}{4}$ " Threads per Inch 9
 " " " in Boilers " "
 Material " " Lowmoor iron.

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

No. of Girders over each Wing Chamber 5
 " " " Centre " 3
 Depth and Thickness of Girders $10\frac{3}{8}" \times \frac{7}{8}"$ (double; plates.)
 Material of Girders Steel.
 No. of Stays in each 4 (bellows)
 No. of Tubes, each Boiler 354
 Size of Lower Manholes $16" \times 12"$

VERTICAL DONKEY BOILERS

Vertical (Donkey) Boilers
 Height of Boiler Crown above Top Flange
 Internal Diameter of Upper Flange
 Description of Boilers
 No. of Tubes
 Material of Water Tubes
 Size of Manhole in Shell
 Diameter of Combustion Ring
 Heating Surface, each Boiler
 Gross Surface

254
 16" x 12"
 2-4" dia x 12"
 820 sq ft
 27 sq ft

SUPERHEATERS



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VERTICAL DONKEY BOILERS.

No. of Boilers *One* Type *Vertical (Cochran & Co. Ltd.)*
 Greatest Int. Diar. *8'-0"* Height *16'-6"*
 Height of Boiler Crown above Fire Grate *14'-3³/₄"*
 Are Boiler Crowns Flat or Dished? *Dished.*
 Internal Radius of Dished Ends *4'-0"* Thickness of Plates *1/2" and 1" (crown*
 Description of Seams in Boiler Crowns *Lap Joints Single Rivetted.*
 Diar. of Rivet Holes *29/32"* Pitch *2'1/8"* Width of Overlap *2³/₄"*
 Height of Firebox Crowns above Fire Grate *3'-3" (approx.)*
 Are Firebox Crowns Flat or Dished? *Dished. (hemispherical)*
 External Radius of Dished Crowns *3'-6"* Thickness of Plates *5/8"*
 No. of Crown Stays *-* Diar. *-* Material *-*
 External Diar. of Firebox at Top *-* Bottom *-* Thickness of Plates *-*
 No. of Water Tubes *224* Ext. Diar. *2'1/2"* Thickness *33 @ 1/32, 191 @ 1/16 S.G.*
 Material of Water Tubes *IRON.*
 Size of Manhole in Shell *16" x 12"*
 Dimensions of Compensating Ring *2'-4" Dia. x 2⁷/₃₂"*
 Heating Surface, each Boiler *850 φ* Grate Surface *37 φ.*

SUPERHEATERS.

Description of Superheaters *(None.)*
 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

E
(double plates)
side, stop respectively.)
 No. 11922.
 B. C. TEST.
 No. 5459.
 200 lbs.
 W.P. 100 lbs.
 E. S. (E S)
 29/10/30
 Safety valves set at the
 W.P. on 26/10/30.
 Compression rings:-
 Port 17/32" (full)
 Starb? do. (R.L.G.)



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EVAPORATORS.

No.	Type	Tons per Day
	Steel ✓	
Makers	Searcy ✓	
Working Pressure	Test Pressure	Date of Test
Date of Test of Safety Valves under Steam		

FEED WATER HEATERS.

No.	One	Type	Direct - Contact	98003
Makers	G. & J. Weir Ltd.			
Working Pressure	20 lb/□	Test Pressure	40 lb/□	Date of Test 13/10/30 (R.L.G.)

FEED WATER FILTERS.

No.	One	Type	Gravity	Size
Makers	D. & W. Henderson & Co. Ltd.			
Working Pressure	✓	Test Pressure	✓	Date of Test
Date of Test				

STEERING GEAR. 2494

One 2 cyl. inverted vert. steam, worm & wheel on R. & L. screw gear direct to crosshead on rudder stock, by Caldwell & Co. Ltd.
(no buffer gear.)

Tested under steam 27/1/31.

LIST OF DONKEY PUMPS.

8245
Ballast; 8" cyl., 9" pump, 9" stroke, vert. duplex, 130 tons/hour; made by J.H. Carruthers and Company Limited.

8246
Fresh Water; 4½" cyl., 4½" pump, 5" stroke, vert. duplex, 25 tons/hour; same makers.

8248
Ash Ejector; 8" cyl., 5" pump, 8" stroke, vert. duplex, 32 tons/hour; same makers.

8247
Donkey Boiler Feed; 4½" cyl., 3" pump, 5" stroke, vert. duplex, 5.8 tons/hour; same makers.

BILGES.

Pumping arrangements tested 27/1/31 with ballast pump. Spaces pumped out - No. 1 hold Port & Starbd., no. 2 hold well, aft hold well; tunnel well, eng. room P. & S., stokehold P., Centre, & S.



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REFRIGERATORS.

No. of Machines *One* Capacity ~~about~~ ** 2 tons of ice per 24 hours*
 Makers *J. & E. Hall Ltd., Dartford. 8366*
 Description *No. 7 marine type C.O₂ Single vent.*

No. of Steam Cylinders, ~~each Machine~~ *One* No. of Compressors *One* No. of Cranks *2.*

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

or Independently

Brine & water pumps driven off end of crankshaft.

System of Refrigeration

Brine.

Insulation

Granulated cork.

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

Spaces?

Yes.

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

Yes.

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?

Yes.

Date of Test under Working Conditions

28th January, 1931.

** with condensing water at 55° F.*

RESULTS OF TRIALS.

COMPARTMENT.	Temp. at beginning of Trial.				Temp. at end of Trial.				Time required to obtain this Result.	Rise of Temp. after 2 hours.
	Fore?	Off?	Fore?	Off?	Fore?	Off?	Fore?	Off?		
After lower hold, about 7000 cub. ft. clear space. (butter.)	50	50	50	50	20	19	18	18	7 ³ / ₄ hours.	4° F.
All brine pipes tested for leakage under an air pressure of 90 lb/sq" on 16/1/31 & found tight.										

Articles of Spare Gear for Refrigerating Plant carried on board:— *4 piston rings 2" x 3/8" x 3/32"; 7 metallic rings; 2 lubricator piston leathers; 2 do. gland do.; 4 compressor valves; 12 springs, no. 4; 1 guide for valves; 1 do.; 17 various copper joint rings; 2 sets Kinghorn valves; 4 sets do.; 1 spring, no. 197; 1 do. no. 6; 6 safety discs; 1 spring, no. 78.*

REFRIGERATORS
REPAIRS OR LAMPS

Single cyl. steam engine 106/1930 by
Alex. Shanks & Son Ltd., Arbroath.

ELECTRIC LIGHTING.

Installation Fitted by *Harland & Wolff Ltd.*
No. and Description of Dynamos *One type C.12 Compound 21.6 K.W.*
Makers of Dynamos *Bruce Peebles & Co. Ltd., Edinburgh* 27006
Capacity „ *196* Amperes, at *110* Volts, *250* Revols. per Min.
Current Alternating or Continuous *Continuous.*
Single or Double Wire System *Double.*
Position of Dynamos *Starboard side of engine room.*
„ Main Switch Board *Beside dynamo.*
No. of Circuits to which Switches are provided on Main Switch Board *10*
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. <i>Megohms.</i>
<i>Navigation.</i>	<i>11 and 1 Morse</i>	<i>B. & T. require's.</i>	<i>4.5</i>	<i>7/029</i>	<i>I.E.E. Standard.</i>	<i>.0045</i>	<i>9.432</i>
<i>First Class & Officers' Accom.</i>	<i>88</i>		<i>30</i>	<i>7/044</i>	<i>"</i>	<i>.01</i>	<i>4.097</i>
<i>Crew.</i>	<i>37</i>	<i>40 & 60 watts.</i>	<i>13.6</i>	<i>7/029</i>	<i>"</i>	<i>.0045</i>	<i>9.432</i>
<i>Main Deck.</i>	<i>30</i>	<i>60 watts.</i>	<i>16.4</i>	<i>7/036</i>	<i>"</i>	<i>.007</i>	<i>6.121</i>
<i>fore hold & tween deck.</i>	<i>11</i>	<i>"</i>	<i>6</i>	<i>3/11</i>	<i>"</i>	<i>.003</i>	<i>14.323</i>
<i>main hold & tween deck.</i>	<i>18</i>	<i>"</i>	<i>9.8</i>	<i>3/11</i>	<i>"</i>	<i>"</i>	<i>"</i>
<i>aft hold & tween deck.</i>	<i>15</i>	<i>"</i>	<i>8.2</i>	<i>3/11</i>	<i>"</i>	<i>"</i>	<i>"</i>
<i>Engine & boiler rooms.</i>	<i>40</i>	<i>40 & 60 watts.</i>	<i>16.4</i>	<i>7/029</i>	<i>"</i>	<i>.0045</i>	<i>9.432</i>
<i>Cargo.</i>	<i>3</i>	<i>500 watts.</i>	<i>13.6</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
<i>Vent. fans.</i>	<i>✓</i>	<i>✓</i>		<i>7/036</i>	<i>"</i>	<i>.007</i>	<i>6.121</i>

Total No. of Lights *253* No. of Motors driving Fans, &c. *10* No. of Heaters *✓*
and one Morse.
Current required for Motors and Heaters *27.2* amps.

Positions of Auxiliary Switch Boards, with No. of Switches on each *for lighting circuits;-*

2 in accommodation, fore-castle deck, with 5 switches for passage & deck lights;

One in crew accommodation forward, with 4 switches for tween deck & hold;

One in engine room entrance, main deck, with 14 switches for main deck, tween decks, & holds;

One in engine room, bottom platform, with 8 switches engine & boiler room lighting.

Are Out-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 Out-outs constructed of Non-Inflammable Material?

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

Smallest Single Wire used, No. 3/029 S.W.G., Largest, No. 37/093 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 ~~as Deck~~ Run on perforated sheet iron trays.
- (2) " passing through Bunkers or Cargo Spaces L.C., A. & B. run in bosom of beams.
- (3) " " Deck Beams or Bulkheads (non W.T.) Bushed with lead.

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?

140,000 Ohms. (.14 megohm.)

Is the Installation supplied with a Voltmeter?

yes.

" " " an Ampere Meter

yes.

Date of Trial of complete Installation

30/1/31

Duration of Trial

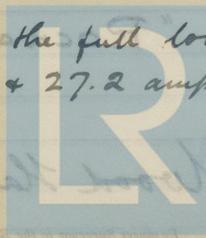
6 hours.

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

* Dynamos only, 4 $\frac{1}{2}$ Megohms. (500 volt megger used.)

Governor trial 30/1/31 with [†] full load of 120 amps. (cattle space fans, cargo clusters, portable lights in holds & machinery spaces; in addition to navigation & accommodation lights and lighting of messy spaces, etc.)

[†] actually the full load should total 118.5 amps for lights & 27.2 amps. for motors = 145.7 amps.



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7 July	24/11/30
8 "	25 "
11 "	28 "
15 "	2/12/30.
1 Aug.	3 "
8 "	5 "
15 "	8 "
22 "	11 "
26 "	18 "
2/9/30.	23 "
16 "	24 "
24 "	26 "
30 "	30 "
1/10/30	16/1/31.
6 "	23 "
7 "	27 "
7 "	28 "
10 "	29 "
13 "	(Cochran's)
14 "	30 "
15 "	
16 "	
17 "	
20 "	
21 "	
24 "	
28 "	
29 "	(Cochran's)
30 "	
31 "	
5/11/30	
6 "	
7 "	
10 "	
13 "	
14 "	
17 "	
18 "	

57 visits



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