

No. 1758

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. *1080* No. in Register Book *3311*

" "   
S.S. *SOUTHERN CHIEF*

Makers of Engines *Smiths Dock Co. Ltd.*

Works No. *295*

Makers of Main Boilers *Richardsons Westgarth & Co.*

Works No. *D169*

Makers of Donkey Boiler

Works No.

MACHINERY



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005453-005461-0041

No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. .... No. in Register Book 3311

Received at Head Office 9th October 1926

Surveyor's Report on the Delta Engines, Boilers, and Auxiliary  
Machinery of the Single Triple Screw Whaler

"Southern Chief"

Official No.

Port of Registry Liverpool

Registered Owners

Southern Whaling Co. Ltd.

Engines Built by

Quintin & Co. Ltd.

at

South Bank-on-Sea

Main Boilers Built by

Richardsons Westgarth & Co. Ltd.

at

Hartlepool

Donkey " "

at

Date of Completion

9-26

First Visit

24-3-26

Last Visit

24-9-26

Total Visits

50

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## RECIPROCATING ENGINES.

Works No. **295** No. of Sets **1** Description **Triple expansion, S.P. Berke.**

No. of Cylinders each Engine **3** No. of Cranks **3**

Diams. of Cylinders **16"-26"-43"** Stroke **26"**

Cubic feet in each L.P. Cylinder **21.8**

Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cyl.?  
 " " " each Receiver? **yes.**

Type of H.P. Valves, **push in piston**

" 1st L.P. "

" 2nd L.P. "

" L.P. " **slide**

" Valve Gear **Stephenson link.**

" Condenser **surface** Cooling Surface **1280** sq. ft.

Diameter of Piston Rods (plain part) **4 1/2"** Screwed part (bottom of thread) **3.16**

Material " **M. Steel.**

Diar. of Connecting Rods (smallest part) **4 1/4"** Material **Inf.**

" Crosshead Gudgeons **4 3/4"** Length of Bearing **5 3/16"** Material "

No. of Crosshead Bolts (each) **4** Diar. over Thrd. **2 1/8"** Thrds. per inch **8** Material **Inf.**

" Crank Pin " " **2** " **2 5/8"** " **6** " "

" Main Bearings **6** Lengths **10 1/8"**

" Bolts in each **2** Diar. over Thread **2 3/8"** Threads per inch **6** Material **Inf.**

" Holding Down Bolts, each Engine **20** Diar. **1 1/4"** No. of Metal Chocks **20**

Are the Engines bolted to the Tank Top or to a Built Seat? **built seat.**

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

If not, how are they fitted? **-**

Connecting Rods, Forged by

Piston " "

Crossheads, " "

Connecting Rods, Finished by

Piston " "

Crossheads, " "

Date of Harbour Trial

" Trial Trip

Trials run at

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

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

Pressure in 1st L.P. Receiver, **6 1/2** lbs., 2nd L.P.,

Speed on Trial

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

Builders' estimated I.H.P.

Estimated Speed

**Smiths WallSEND Forge.**  
**Tipton Forge Co.**  
**Smiths WallSEND Forge.**  
**Smiths Dock Co. Ltd.**

**16-9-26****22-9-26****Whitley Bay, measured trials.**Revs. per min. **149**lbs., L.P., **25** lbs., Vacuum, **26** ins.**13 knots**

Revs. per min.



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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.

No. of Lengths

Diam. of Pitch Circle

No. of Collars

At All Couplings

At Couplings

Length of Aft Bearings

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SHAFTING.

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

No. of Lengths in each *4* Angle of Cranks *120°*

Diar. by Rule *8.25* Actual *8 1/2"* In Way of Webs *8 7/8"*

" of Crank Pins *8 3/4"* Length between Webs *11"*

Greatest Width of Crank Webs *24"* Thickness *5 1/4"*

Least " " *13"* " " *5 1/4"*

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

" Dowels in Crank Pins *1"* Length *3 1/2"* Screwed or Plain *plain.*

No. of Bolts each Coupling *6* Diar. at Mid Length *2"* Diar. of Pitch Circle *12 1/2"*

Greatest Distance from Edge of Main Bearing to Crank Web *3/16"*

Type of Thrust Blocks *Korseshoe.*

No. " Rings *6*

Diar. of Thrust Shafts at bottom of Collars *8 1/2"* No. of Collars *6*

" " Forward Coupling *8 1/2"* At Aft Coupling *8 1/2"*

Diar. of Intermediate Shafting by Rule  Actual  No. of Lengths

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

Diar. of Propeller Shafts by Rule *8.7"* Actual *8 7/8"* At Couplings *8 1/2"*

Are Propeller Shafts fitted with Continuous Brass Liners? *continuous.*

Diar. over Liners *10"* Length of After Bearings *4'-0 1/2"*

Of what Material are the After Bearings composed? *Signum Filas.*

Are Means provided for lubricating the After Bearings with Oil? *no*

" " to prevent Sea Water entering the Stern Tubes? *no*

If so, what Type is adopted?

SKETCH OF CRANK SHAFT.

*Handwritten notes and sketches on the right page, including 'SKETCH OF CRANK SHAFT.' and various measurements and descriptions.*

*Stamp: No. 10000, 10-H-50, R.S.*

*Stamp: No. 10000, 10-H-50, R.S.*



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## PUMPS, ETC.

No. of Air Pumps 1      Diar. 1'-2 1/2"      Stroke 1'-1 1/2"

Worked by Main or Independent Engines? *Main engines.*

No. of Circulating Pumps 1      Diar.      Stroke

Type of " *Centrifugal.*

Diar. of "      Suction from Sea

Has each Pump a Bilge Suction with Non-return Valve? *yes.*      Diar. 5-1/2"

What other Pumps can circulate through Condenser? *G. S. pump.*

No. of Feed Pumps on Main Engine      Diar.      Stroke

Are Spring-loaded Relief Valves fitted to each Pump?

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

No. of Independent Feed Pumps 2      Diar. 8 1/2"      Stroke 18"

What other Pumps can feed the Boilers? *G. S. Donkey.*

No. of Bilge Pumps on Main Engine 2      Diar. 3"      Stroke 13 1/2"

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

No. of Independent Bilge Pumps 2

What other Pumps can draw from the Bilges? *G. S. Donkey.*

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 1      Diar. 30-1-00"      Stroke 30-1-00"

Worked by Main or Independent Engines? *Main engines.*

No. of Circulating Pumps 1      Diar.      Stroke

Type of " *Centrifugal.*

Diar. of "      Suction from Sea

Has each Pump a Bilge Suction with Non-return Valve? *yes.*      Diar. 5-1/2"

What other Pumps can circulate through Condenser? *G. S. pump.*

No. of Feed Pumps on Main Engine      Diar.      Stroke

Are Spring-loaded Relief Valves fitted to each Pump?

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

No. of Independent Feed Pumps 2      Diar. 8 1/2"      Stroke 18"

What other Pumps can feed the Boilers? *G. S. Donkey.*

No. of Bilge Pumps on Main Engine 2      Diar. 3"      Stroke 13 1/2"

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

No. of Independent Bilge Pumps 2

What other Pumps can draw from the Bilges? *G. S. Donkey.*

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.*



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## BOILERS.

Works No. *D/169*

No. of Boilers *1* Type *Cylindrical multitubular*

Single or Double-ended *single.*

No. of Furnaces in each *3*

Type of Furnaces *Horizontal*

Date when Plan approved *30-1-26.*

Approved Working Pressure *200 lbs.*

Hydraulic Test Pressure *350*

Date of Hydraulic Test *16-6-26*

„ when Safety Valves set *16-9-26*

Pressure at which Valves were set *206 lbs.*

Date of Accumulation Test *16-9-26*

Maximum Pressure under Accumulation Test *208 lbs.*

System of Draught *Howden's A.*

Can Boilers be worked separately? *Yes.*

Makers of Plates *Stalville Lons Ltd.*

„ Stay Bars *R. B. & Co.*

„ Rivets *Leeds Forge Coy.*

„ Furnaces *15'-3"*

Greatest Internal Diam. of Boilers *12'-1"*

„ „ Length „ *2890 #*

Square Feet of Heating Surface each Boiler *61 #*

„ „ Grate „ „ *2*

No. of Safety Valves each Boiler *2* Rule Diam. Actual *3"*

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

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

„ Test Cocks „ „ *-* „ Salinometer Cocks *1*



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

*on 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?

No. of Strakes of Shell Plating in each Boiler

Plates in each Strake

Thickness of Shell Plates Approved

in Boilers

Are the Rivets Iron or Steel?

Are the Longitudinal Seams Butt or Lap Joints?

Are the Butt Straps Single or Double?

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?

No. of Rivets in a Pitch

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Front End Circumferential Seams

Are these Seams Hand or Machine riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

Size of Manholes in Shell

Dimensions of Compensating Rings

*1*  
*2*  
*2 3/8"*  
*1 3/8"*  
*stub*  
*butt*  
*double*  
*yes*  
*1 1/16"*  
*1 3/16"*  
*machine*  
*treble*  
*5*  
*1 7/16"* Pitch *9 3/8"*  
*2*  
*Hand*  
*1 7/16"* Pitch *4 1/4"*  
*2*  
*Machine*  
*1 7/16"* Pitch *4 1/4"*  
*16" x 12"*  
*2'-9" x 2'-5" x 1 3/8"*

Thickness of End Plates in Steam Spaces Approved

in Boilers

Kind of Steam Space Straps

Dist. of Threads per Inch

in Boilers

Material of

How are Straps Secured?

Dist. and Thickness of Loose Washers on End Plates

Riveted

With

Thickness of Middle Back End Plates Approved

in Boilers

Thickness of Doublers in Wide Spaces between Rivets

Kind of Straps at

Dist. of Straps Approved

in Boilers

Material

Are Straps Fitted with Nuts outside?

Thickness of Back End Plates at Bottom Approved

in Boilers

Kind of Straps at Wide Spaces between Rivets

Thickness of Doublers in

Thickness of Front End Plates at Bottom Approved

in Boilers

No. of Longitudinal Straps in Wide Spaces between Rivets





Diar. of Stays Approved  $3''$  Threads per Inch 9  
 " " in Boilers  $3''$  " 9

Material " *steel.*

Thickness of Front Tube Plates Approved  $\frac{7}{8}''$

" " " " in Boilers  $\frac{7}{8}''$

Pitch of Stay Tubes at Spaces between Stacks of Tubes  $13\frac{1}{2}'' \times 7\frac{1}{4}''$

Thickness of Doublings in " " "

" Stay Tubes at " " "

$\frac{1}{2}'' \times \frac{3}{4}''$

Are Stay Tubes fitted with Nuts at Front End? *yes.*

Thickness of Back Tube Plates Approved  $\frac{25}{32}''$

" " " " in Boilers  $\frac{25}{32}''$

Pitch of Stay Tubes in Back Tube Plates  $9\frac{1}{16}'' \times 7\frac{1}{2}''$

" Plain "  $3\frac{5}{8}'' \times 3\frac{3}{4}''$

Thickness of Stay Tubes  $\frac{1}{2}''$   $\frac{3}{8}'' + \frac{5}{16}''$

" Plain " *8 W.L.*

External Diar. of Tubes  $2\frac{1}{2}''$

Material " *Iron.*

Thickness of Furnace Plates Approved  $\frac{5}{8}''$

" " " " in Boilers  $\frac{5}{8}''$

Smallest outside Diar. of Furnaces  $3'-8\frac{3}{4}''$

Length between Tube Plates  $8'-3''$

Width of Combustion Chambers (Front to Back)  $3'-17\frac{1}{16}''$

Thickness of " " Tops Approved  $\frac{1}{16}''$

" " " " in Boilers  $\frac{1}{16}''$

Pitch of Screwed Stays in C.C. Tops  $9\frac{1}{2}'' \times 8\frac{1}{4}''$

Diar. of Screwed Stays Approved  $1\frac{3}{4}''$  Threads per Inch  $1\frac{3}{4}''$

" " in Boilers " " "

Material " *steel.*

Thickness of Combustion Chamber Sides Approved  $\frac{1}{32}''$

" " " " in Boilers  $\frac{1}{32}''$

Pitch of Screwed Stays in C.C. Sides  $8\frac{1}{2}'' \times 8\frac{1}{2}''$

Diar. " " Approved  $1\frac{1}{8}''$  Threads per Inch  $1\frac{1}{8}''$

" " in Boilers " " "

Material " *steel.*

Thickness of Combustion Chamber Backs Approved  $\frac{1}{32}''$

" " " " in Boilers  $\frac{1}{32}''$

Pitch of Screwed Stays in C.C. Heads  $8\frac{1}{2}'' \times 8\frac{1}{2}''$

Diar. " " Approved  $1\frac{1}{8}''$  Threads per Inch  $1\frac{1}{8}''$

" " in Boilers " " "

Material " *steel.*

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

Thickness of Combustion Chamber Bottoms  $\frac{1}{32}''$

No. of Girders over each Wing Chamber 3

Centre " " "

Depth and Thickness of Girders  $10\frac{1}{2}'' \times 10\frac{1}{2}''$

Material of Girders *Iron.*

No. of Stays in each " " "

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No. of Stay Bolts " " "

Size of Lower Manholes " " "



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

Thickness of Combustion Chamber Sides Approved  $2\frac{1}{32}$ "  
 " " " in Boilers  $2\frac{1}{32}$ "  
 Pitch of Screwed Stays in C.C. Sides  $8\frac{1}{2} \times 8\frac{1}{4}$ "  
 Diar. " " Approved  $1\frac{5}{8}$ " Threads per Inch 9  
 " " " in Boilers  $1\frac{5}{8}$ " " 9  
 Material " " *steel.*

Thickness of Combustion Chamber Backs Approved  $2\frac{1}{32}$ "  
 " " " in Boilers  $2\frac{1}{32}$ "  
 Pitch of Screwed Stays in C.C. Backs  $8\frac{5}{8} \times 8\frac{1}{4}$ "  
 Diar. " " Approved  $1\frac{7}{8}$ " Threads per Inch 9  
 " " " in Boilers  $1\frac{7}{8}$ " " 9  
 Material " " *steel.*

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

Thickness of Combustion Chamber Bottoms  $1\frac{3}{16}$ "

No. of Girders over each Wing Chamber 3

" " " Centre " 2

Depth and Thickness of Girders  $10" \times 1\frac{5}{8}"$

Material of Girders *steel.*

No. of Stays in each 3

No. of Tubes, each Boiler 439

Size of Lower Manholes  $16 \times 12"$

## VERTICAL DONKEY BOILERS

No. of Boilers  
 Type  
 Greatest Int. Diar.  
 Height of Boiler Crown above Fire Grate  
 Are Boiler Crowns Flat or Dished?  
 Internal Radius of Dished Heads  
 Thickness of Plates  
 Description of Stays in Boiler Crowns  
 Diar. of Head Boilers  
 Height of Head Boilers above Fire Grate  
 Are Head Boilers Flat or Dished?  
 Internal Radius of Dished Crowns  
 Thickness of Plates  
 No. of Crown Stays  
 Diar.  
 Internal Diar. of Head Box at Top  
 Thickness of Plates  
 No. of Water Tubes  
 Int. Diar.  
 Material of Water Tubes  
 Size of Manhole in Shell  
 Dimensions of Combustion Box  
 Heating surface, each Boiler  
 Gross surface

## SUPERHEATERS

Description of Superheaters

Where situated?

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## VERTICAL DONKEY BOILERS.

No. of Boilers *1/4* Type *9*

Greatest Int. Diar. *18"* Height *10'*

Height of Boiler Crown above Fire Grate *2 1/2'*

Are Boiler Crowns Flat or Dished? *Flat*

Internal Radius of Dished Ends *18"* Thickness of Plates *3/16"*

Description of Seams in Boiler Crowns *2 1/2' x 2 1/2'*

Diar. of Rivet Holes *1/8"* Pitch *1 1/2"* Width of Overlap *1/2"*

Height of Firebox Crowns above Fire Grate *1'*

Are Firebox Crowns Flat or Dished? *Flat*

External Radius of Dished Crowns *18"* Thickness of Plates *3/16"*

No. of Crown Stays *1* Diar. *1/2"* Material *Steel*

External Diar. of Firebox at Top *18"* Bottom *18"* Thickness of Plates *3/16"*

No. of Water Tubes *18* Ext. Diar. *1 1/8"* Thickness *1/8"*

Material of Water Tubes *Steel*

Size of Manhole in Shell *18" x 18"*

Dimensions of Compensating Ring *Steel*

Heating Surface, each Boiler *40* Grate Surface *40*

## SUPERHEATERS.

Description of Superheaters *10' x 1 1/8"*

No. of Boilers over each Superheater *3*

Where situated? *10' x 1 1/8"*

Which Boilers are connected to Superheaters? *10' x 1 1/8"*

Can Superheaters be shut off while Boilers are working? *Steel*

No. of Safety Valves on each Superheater *3* Diar. *3"*

Are " " fitted with Basing Gear? *10' x 1 1/8"*

Date of Hydraulic Test *1/17* Test Pressure *100*

Date when Safety Valves set *1/17* Pressure on Valves *100*

## MAIN STEAM PIPES

No. of Pipes *2*

Material *Steel*

Internal Dia. *4"*

Thickness *3/16"*

How are Flanges secured? *Welded*

Date of Hydraulic Test *10-2-13*

Test Pressure *100*



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## MAIN STEAM PIPES.

No. of Lengths	1	2	
Material	copper.	copper.	
Brazed, Welded or Seamless	Solid-drawn.		
Internal Diam.	4"	4"	
Thickness	5 w.g.	5 w.g.	
How are Flanges secured?	braked.		
Date of Hydraulic Test	6-9-26	13-9-26	
Test Pressure	400 lbs.		
No. of Lengths			
Material			
Brazed, Welded or Seamless			
Internal Diam.			
Thickness			
How are Flanges secured?			
Date of Hydraulic Test			
Test Pressure			
No. of Lengths			
Material			
Brazed, Welded or Seamless			
Internal Diam.			
Thickness			
How are Flanges secured?			
Date of Hydraulic Test			
Test Pressure			

## SUPERHEATERS

No. 1  
 Material  
 Working Pressure  
 Date of Test  
 Test Pressure  
 Date of Test of Safety Valves under Steam  
 No. 1  
 Material  
 Working Pressure  
 Date of Test  
 Test Pressure  
 Date of Test of Safety Valves under Steam

## FEED WATER FILTERS



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EVAPORATORS.

No.	Type	Makers	Working Pressure	Test Pressure	Date of Test	Tons per Day
		<i>coffee coffee</i>				
		<i>4 1/2</i>				
		<i>5 1/2</i>				

How are Valves secured? *braced*

FEED WATER HEATERS.

No.	Type	Makers	Working Pressure	Test Pressure	Date of Test
<i>1</i>	<i>Surface Feed Heater, Exhaust Steam</i>	<i>Caird &amp; Rayner</i>	<i>200 lbs.</i>	<i>400 lbs.</i>	

FEED WATER FILTERS.

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

LIST OF DONKEY PUMPS.

*Thos. Lamont's Vertical Duplex*  
*General Service Donkey 6" x 4 1/4" x 6"*  
*1 Pair. Wells Feed pumps 6" x 8 1/2" x 18"*

No.	Type	Makers	Working Pressure	Test Pressure	Date of Test	Size
<i>1</i>	<i>Vertical Duplex</i>	<i>Thos. Lamont</i>				
<i>2</i>	<i>General Service Donkey</i>	<i>General Service</i>				
<i>3</i>	<i>Wells Feed pumps</i>	<i>Wells</i>				



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REFRIGERATORS.

No. of Machines *2* Capacity of each *3*  
 Makers *6*  
 Description *1 set*  
 No. of Steam Cylinders, each Machine *2* No. of Compressors *2* No. of Cranks *2*  
 Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines or Independently  
 No. of Steam Cylinders *1* No. of Cranks *1*  
 No. of Piston Rings *8* No. of Valves *12* No. of Cranks *30*

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.
<i>Forward</i>	<i>17</i>	<i>5.1</i>	<i>7/026</i>	<i>1389</i>
<i>Midships</i>	<i>10</i>	<i>5</i>	<i>7/036</i>	<i>1389</i>
<i>Aft</i>	<i>19</i>	<i>5.7</i>	<i>7/036</i>	<i>1389</i>

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

*Wires* *15* *7/04* *1389*



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## ELECTRIC LIGHTING.

Installation Fitted by *R. Pickering & Son Ltd.*  
 No. and Description of Dynamo *1 Compound Wound*  
 Makers of Dynamos *Sunderland Forge & Eng Co. Ltd.*  
 Capacity *45* Amperes, at *110* Volts, *340* Revols. per Min.  
 Current Alternating or Continuous *Continuous.*  
 Single or Double Wire System *Double.*  
 Position of Dynamos *Starting Platform.*  
 " Main Switch Board " " " "

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

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>Forward Accommodation</i>	<i>17</i>	<i>630 watts</i>	<i>5.1</i>	<i>7/036</i>	<i>.1389</i>	<i>100%</i>	<i>900 ohms</i>
<i>Navigation</i>	<i>10</i>	<i>500 watts</i>	<i>5</i>	<i>7/036</i>	<i>.1389</i>		
<i>Engine Room &amp; Aft.</i>	<i>19</i>	<i>570 watts</i>	<i>5.7</i>	<i>7/036</i>	<i>.1389</i>		
<i>wireless</i>			<i>15</i>	<i>7/064</i>	<i>.1389</i>		
Total No. of Lights		<i>46</i>		No. of Motors driving Fans, &c.		No. of Heaters	
Current required for Motors and Heaters							









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