

No. 1260

TRANSFERRED TO:  
L. R. SYSTEM

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

*CITY OF CORK*  
Report No. *1240* No. in Register Book *1929*

S.S. *"Goodwin"* TRANSFERRED TO:  
L. R. SYSTEM

Makers of Engines *Baldon & E. Co.*

Works No. *444*

Makers of Main Boilers *Baldon & E. Co.*

Works No. *444*

Makers of Donkey Boiler

Works No.

MACHINERY.



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002024-002037-0051



No.

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. *1240* No. in Register Book *1929*

Received at Head Office

*8* FEB 1918

Surveyor's Report on the New Engines, Boilers, and Auxiliary  
Machinery of the *S.S. "Goodwin"*

Port of Registry

*Glasgow*

Registered Owners

*Glyde Shipping Co Ltd*

Surveyor's District

*Dundee*

Date of Completion of Engines

*May 1914*

" " Main Boilers

*1914*

" " Donkey

*1914*

Trial Run at

*River Tay*

Date *23.5.17*

First Visit

*2/6/15*

Last Visit

*25/5/14*

Total Number of Visits

*44 + 8 by Mr Barr*

*Speed on measured mile 14.03 kts. (mean of 4 runs)*

*8 visits paid by Mr Barr*

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## ENGINES.

Made by *Caledon S & E. Co*  
 " at *Dundee Lilybank engine works* No. *444*  
 Description *Triple. Inverted. Condensing*  
 No. of Cylinders, each Engine *3* Diars. *21" 3/4 x 56"* Stroke *39*  
 Cub. feet in each L.P. Cylr. *55.58* Revols. per Min. *102* I.H.P. *18.53*  
 Pressure in I.P. Receiver at full Power *68* 2nd I.P. L.P. *16*  
 Thickness of Metal in H.P. Cylr. *1/8"* I.P. *1/8"* " *1/4"*  
 " " " " Liner *1/4"* " — " —  
 " " " " Valve Chest *1/8"* " *1/8"* " *1/8"*  
 Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.? *Yes*  
 " " " each Receiver? *Yes*  
 Number of Bolts in H.P. Cylr. Cover *22* I.P. *22* 2nd I.P. L.P. *25*  
 Eff. Diar. " " " *1.067* " *1.067* " *1.067*  
 Pitch " " " *4 1/2"* " *6 1/4"* " *8 1/4"*  
 Type of H.P. Valves (Piston or Slide) *Piston. Andrews.* *Double Ported Slide*  
 " Valve Gear *Ordinary Link Motion*  
 Diameter of Piston Rods (plain part) *5 1/2"* At Bottom of Thread *4 1/4"*  
 Makers " *Steel Co of Scotland* Material *Steel*  
 Diameter of Connecting Rods (smallest part) *5 1/2"* Material *Steel*  
 Makers " *Robt Kerr & Sons Irvine*  
 Diar. of Crosshead Gudgeons *6 1/4"* Length of Bearing *4"* Material *Steel*  
 No. of Top End Bolts (each Rod) *4* Effective Diar. *2 1/4"* Material *Cable Iron*  
 " Bot. " " *2* " *3"* " *Cable Iron*  
 " Main Bearings *6* Lengths *12 1/2"*  
 " Bolts in each *2* Effective Diar. *2 1/4"* Material *Steel*

No. of Holding Down Bolts, each Engine *75* No. of Metal Chocks *75*  
 Eff. Diar. " " " *1.067* Average Pitch *21"*  
 Are the Engines bolted directly to the Tank Top? *Yes*  
 Are the Bolts tapped through the Tank Top and fitted with Nuts inside? *Yes*  
 Date of Test of Tank by Water Pressure with Holding Down Bolts in place *25/5/14*

## SKETCHES.



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## SKETCHES.

## SHAFTING.

Are Crank Shafts Built? *Yes* No. of Lengths in each *2* Angle of Cranks *120°*  
 Diar. of Crank Shafts by Rule *10.9"* Actual *11 1/2"* Diar. in Way of Webs *11 1/2"*  
 Makers of *J. Spencer & Sons Ltd* Coupling ends *R. Kerr & Sons* Plain ends or body pieces Material *Steel*  
 Diar. of Crank Pins *11 1/2"* Diar. in Way of Web *11 1/2"*  
 Makers of *R. Kerr & Sons Irvine* Material *Steel*  
 Width across Crank Webs at Centre of Shaft *1' 8 3/4"* Thickness *8"*  
 " " " " Crank Pins *1' 8 3/4"* " *8"*  
 " " " " Narrowest part *1' 8 3/4"* " *8"*  
 Makers of Crank Webs *Stewart & Lloyd Ltd* Material *Steel*  
 Diar. or Breadth of Keys in Crank Webs *1 3/4" dia* Length *6 1/2"*  
 " of Dowel Pins in Crank Pins *1 1/4"* Length *5"* Screwed or Plain *screwed*  
 No. of Bolts in each Coupling *6* Diar. at Mid Length *2 3/4"* Diar. of Pitch Circle *1' 5"*  
 Material of Coupling Bolts *Steel*  
 Crank Shafts Finished by *Galedon & E. Co*  
 Greatest Distance from edge of Main Bearing to Crank Web *1/2"*

Description of Thrust Blocks *Horse Shoe Pattern*  
 Number " " Rings *6*

Diar. of Thrust Shafts by Rule *10.9"* Actual (at bot. of Collars) *11 1/2"* Over Collars *1' 9 1/2"*  
 " " at Forward Coupling *11 1/2"* After Coupling *11 1/2"*  
 No. of Thrust Collars *6* Thickness *2"* Distance apart *4 3/4"*  
 Thrust Shafts Forged by *J. Spencer & Sons Ltd* Material *Steel*  
 " Finished by *Galedon & E. Co*

Diar. of Intermediate Shafting by Rule *10.35"* Actual *11"*  
 No. of Lengths, each Engine *3* No. of Tunnel Bearings *4*  
 Diar. of Bearings *11 1/4"* Length *16"* Distance apart *16' 0"*



No. of Bolts, each Coupling  $\phi$  Diar. at Mid Length  $2\frac{3}{4}$ " Diar. of Pitch Circle  $1'-5"$   
 Intermediate Shafts Forged by *J. Spencer & Sons L<sup>rs</sup>* Material *Steel*  
 " " Finished by *Galedon & E. Co.*  
 $10.35 + 1.17 = 11.52$  PM  
 1.246  
 Diar. of Propeller Shafts by Rule *11.38*" Actual *12' 9" aft 12'* At Couplings *12' 8"*  
 Are Propeller Shafts fitted with Continuous Brass Liners? *Yes*  
 Diar. over Liners *12' 13' 8" aft 13' 2"* Length of After Bearings *4'-0"*  
 Of what Material are the After Bearings composed? *Brass bush withignum vitae*  
 Distance from After Bearing in Stern Tube to nearest Tunnel Bearing *13'-0"*  
 Are the After Bearings lubricated with Oil or Sea Water? *Sea Water*  
 What means are adopted to prevent Sea Water entering the Stern Tubes? *None*  
 Propeller Shafts Forged by *Robert Kerr & Co. Irvine.* Material *Iron*  
 " " Finished by *Galedon & E. Co.*

No. of Propellers *1* Diar. *14 ft* Pitch *13'-3"*  
 " Blades, each Propeller *4* Fitted or Solid *Fitted*  
 Material of Blades *Cast Steel* Boss *Cast iron*  
 Surface, each Propeller *58' 6"  $\phi$*  Diar. of Propeller *= 15.4*  
 Rule Diar. of Crank Shaft =  
 Coefficient of Displacement of Vessel at  $\frac{1}{2}$  Moulded Depth *.64*  
*4 Spare Blades Bronze*

## SKETCHES.

$$\text{Inter} = \sqrt[3]{\frac{185 \times 56^2 \times 39}{2150 \left( \frac{56}{21} \right)^2 + 2}} = 10.5$$

3140  
1158  
9.1

$$\text{Tail Shaft } \phi = 10.5 + 1.17 = 11.67"$$

11.27



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## TURBINE ENGINES.

Type

No. of H.P. Turbines

No. of L.P. Turbines

No. of Astern „

How arranged

Revs. per Min.

Horse Power

Diar. of H.P. Turbine Drums

MATERIAL

THICKNESS OF METAL

Material of H.P. Turbine Casings

" "

Lengths of Blades in H.P. Turbines

No. of Rows of Blades of each Length

Pitch of „ „ „

Diar. of L.P. Turbine Drums

MATERIAL

THICKNESS OF METAL

Material of L.P. Turbine Casings

" "

Lengths of Blades in L.P. Turbines

No. of Rows of Blades of each Length

Pitch of „ „ „

Diar. of Astern Turbine Drums

MATERIAL

THICKNESS OF METAL

Material of Astern Turbine Casings

" "

Lengths of Blades in Astern Turbines

No. of Rows of Blades of each Length

Pitch of „ „ „

Diar. of Turbine Spindles

Length of Bearing

No. of Thrust Collars on each Spindle

Thickness

Distance apart

Diar. of Spindles at Bottom of Collars

Diar. over Collars

Spindles Forged by

Material

„ Finished by

## SKETCHES.



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## SKETCHES.

## SKETCHES.



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## PUMPS, ETC.

No. of Air Pumps *1* Diar. *20 1/2"* Stroke *20"*

Type of *Edwards*

Diar. of Air Pump Rod *2 3/4"* Material *Muntz Metal*

How are Air Pumps Worked? *From Main engine levers*

No. of Centrifugal Circulating Pumps *1* Maker *Drysdale & Co Ltd*

" Reciprocating " " Diar. " Stroke

Diar. of Circulating Pump Rods Material

How are Circulating Pumps Worked? *Direct acting Engine*

Diar. of Circulating Pump Suction from Sea *11"*

Has each Circulating Pump a Bilge Suction with Non-return Valve? *Yes* Diar. *4 1/2"*

No. of Feed Pumps on each Engine *2* Diar. *3 1/2"* Stroke *20"*

Where do they pump from? *Hotwell direct & Hotwell through filter.*

" " discharge to? *Boilers direct & Boilers through heater*

Are Spring-loaded Relief Valves fitted to each Pump? *Yes*

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

No. of Bilge Pumps on each Engine *2* Diar. *3 1/2"* Stroke *20"*

Where do they pump from? *Bilges with After Pump & Bilges & tanks with forward pumps*

" " discharge to? *Overboard & Bilges with after Pump & Overboard & deck with forward pumps*

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

No. of Bilge Injections connected to Condensers *None* Diar.

Are all Bilge Suctions fitted with Roses? *Yes*

Are the Valves, Cocks, and Pipes so arranged as to prevent unintentional connection between Sea and

Bilges? *Yes*

Are all Sea Connections made with Valves or Cocks fitted direct to the Hull Plating? *Yes*

Are they placed so as to be easily seen and accessible? *Yes*

Are the Discharge Chests placed above the Deep Load Line? *No. but in dis pipe carried 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.

Boilers made by *Caledon S.E. Co.*  
 „ at *Lilybank Engine Works*  
 Works No. *444*  
 Date when Plan approved  
 Boiler Plates, Iron or Steel *Steel*  
 Makers of Shell Plates *D. Colville & Sons Motherwell*  
 „ Internal Plates *J. Spencer & Sons Ltd*  
 „ Furnaces *Deighton Patent Blue & Tube Co Ltd Leeds*  
 „ Stay Bars *D. Colville & Sons Motherwell*  
 „ Rivets *Rivet, Bolt & Nut Co Ltd Glasgow*  
 Material tested by (B.C., B.T., etc.)  
 No. of Boilers *2*  
 Single or Double-ended *Single*  
 No. of Furnaces, each Boiler *3*  
 Type of Furnaces *Deighton Corrugated*  
 Approved Working Pressure *185 lbs*  
 Hydraulic Test Pressure *370 "*  
 Date of Hydraulic Test *5.12.16*  
 „ when Safety Valves set *11.5.17*  
 Pressure on Valves *188 lbs*  
 Date of Steam Accumulation Test *11.5.17*  
 Max. Pressure under Accumulation Test *195 lbs*  
 System of Draught *Natural*  
 Can Boilers be worked separately? *Yes*  
 Greatest inside Diam. of Boilers *15'-9"*  
 „ „ Length „ *13'-0"*  
 Square Feet of Heating Surface, each Boiler *2566*  
 „ „ Grate „ „ *42*

B. C. TEST  
 No 2136  
 370 LBS.  
 J. F.  
 5.12.16



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No. of Safety Valves, each Boiler 2

Diar. " " " 3 1/4"

Area " " " 8.295

Are the Valves fitted with Easing Gear? Yes

No. of Pressure Gauges, each Boiler 2

" Water " " 2

" Test Cocks, None

" Salinometer Cocks, 1

Are Water Gauge Pillars attached by Pipes to Steam and Water Spaces? Yes

Are these Pipes connected to Boilers by Cocks or Valves? Cocks

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

No. of Strakes of Shell Plating in each Boiler 1

" Plates in each Strake 3

Thickness of Shell Plates by Rule

" " Approved 1 15/32

" " in Boilers 1 15/32

Are the Rivet Holes Punched or Drilled? Drilled

Are Rivets Iron or Steel? Steel

Are the Longitudinal Seams Butt or Lap Joints? Butt

Are the Double Butt Straps of equal width? Yes

Thickness of outside Butt Straps 1 1/8"

" inside " 1 1/8"

Are Longitudinal Seams Hand or Machine Riveted? Machine

Are they Single, Double, or Treble Riveted? Treble

Diar. of Rivet Holes 1 1/2"

Pitch " 5 1/32"

Width of Overlap

Percentage of Strength in Longitudinal Seams Plate Section 85.6 %  
Rivet " 88.4 %



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No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes

Pitch

Width of Overlap

No. of Rows of Rivets in End Circumferential Seams

Are these Seams Hand or Machine Riveted?

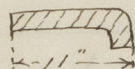
Diar. of Rivet Holes

Pitch

Width of Overlap

Size of Manholes in Shell

Dimensions of Compensating Rings



16" x 12"

1' 5 3/2" thick

Thickness of End Plates in Steam Space by Rule

" " " " " Approved

" " " " " in Boilers

Pitch of Steam Space Stays

Eff. Diar. " " " by Rule

" " " " " Approved

" " " " " in Boilers

Material of " " "

How are Stays Secured?

Diar. and Thickness of Loose Washers on End Plates

" " Riveted " " "

Width " " Doubling Strips " "

Thickness of Middle Back End Plate by Rule

" " " " " Approved

" " " " " in Boilers



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Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at " " " "

Eff. Diar. of Stays by Rule

" " " Approved

" " " in Boilers

Material "

Are Stays fitted with Nuts outside?

Thickness of Back End Plates at Bottom by Rule

" " " " Approved  $2\frac{1}{32}$ "

" " " " in Boilers  $2\frac{1}{32}$ "

Pitch of Stays at Wide Spaces between Fireboxes  $1'-1\frac{3}{4}"$

Thickness of Doublings in " "  $\frac{1}{8}"$

Thickness of Front End Plates at Bottom by Rule

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

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

No. of Long Stays in Spaces between Furnaces  $3$  between each two

Eff. Diar. of Stays by Rule

" " " " Approved  $2"$

" " " " in Boilers  $2"$

Material of " *Steel*

Thickness of Front Tube Plates by Rule

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

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

Pitch of Stay Tubes at Spaces between Stacks of Tubes  $1'-2\frac{3}{4}"$

Thickness of Doublings in " " "  $\frac{1}{8}"$

" Stay Tubes at " " "  $3" + 4$  off  $\frac{1}{16}"$



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Are Stay Tubes fitted with Nuts at Front End?

*4 only*

Thickness of Back Tube Plates by Rule

" " " Approved

*3 1/32"*

" " " in Boilers

*3 1/32"*

Pitch of Stay Tubes in Back Tube Plates

*10" x 10"*

" Plain "

*5" x 5"*

Thickness of Stay Tubes

*3"*

" Plain "

*No 4 N.G. = 1 1/4*

External Diar. of Tubes

*3 3/4"*

Material " "

*Iron*

Thickness of Furnace Plates by Rule

" " " Approved

*1 1/16"*

" " " in Boilers

*1 1/16"*

Smallest outside Diar. of Furnaces

*4'-1 3/8"*

Length between Tube Plates

*8'-0"*

Width of Combustion Chambers (Front to Back)

*3'-1 1/2"*

Thickness of " " Tops, by Rule

" " " " Approved

*5"*

" " " " in Boilers

*5"*

Pitch of Screwed Stays in C.C. Tops

*7 3/4" x 8 1/2"*

Eff. Diar. " " by Rule

" " " Approved

*1.48*

" " " in Boilers

*1.48*

Material " "

*Iron*

Thickness of Combustion Chamber Sides by Rule



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Thickness of Combustion Chamber Sides Approved  $5\frac{5}{8}$ "  
 " " " " in Boilers  $5\frac{5}{8}$ "

Pitch of Screwed Stays in C.C. Sides  $12\frac{3}{4}" \times 9"$  *ruled*

Eff. Diar. " " by Rule  $1\frac{1}{4}$ "

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

" " " in Boilers  $1\frac{1}{4}$ "

Material " " *Iron*

Thickness of Combustion Chamber Backs by Rule

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

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

Pitch of Screwed Stays in C.C. Backs  $8\frac{1}{4}" \times 8\frac{1}{4}"$

Eff. Diar. " " by Rule

" " " Approved  $1\frac{1}{4}$ " *Marginal stays 1-604*

" " " in Boilers  $1\frac{1}{4}$ " " " *1-604*

Material " " *Iron*

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

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

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber  $5$

" " " Centre "  $4$

Depth and Thickness of Girders  $11\frac{1}{2}" \times 4\frac{3}{8}"$  *each plate*

Material of Girders *Steel*

No. of Stays in each  $4$

No. of Stay Tubes, each Boiler  $95$

" " Plain " " "  $140$

Size of Lower Manholes  $16" \times 12"$

# VERTICAL POWER BOILERS

It is the object of this section to give the designer a guide to the construction of vertical power boilers, and to show the relative merits of the various types of construction.

The following table gives the relative merits of the various types of construction, and shows the relative merits of the various types of construction.

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## VERTICAL DONKEY BOILERS.

If the Donkey Boilers are Vertical the following particulars should be stated in addition to those on previous Pages applicable to such Boilers:—

Type of Boilers

Height of Boiler Crown above Fire Grate

Are Boiler Crowns Flat or Dished?

Internal Radius of Dished Ends

Thickness of Plates

Description of Seams in Boiler Crowns

Diar. of Rivet Holes

Pitch

Width of Overlap

Height of Firebox Crowns above Fire Grate

Are Firebox Crowns Flat or Dished?

External Radius of Dished Crowns

Thickness of Plates

No. of Crown Stays

Effective Diar.

Material

External Diar. of Firebox at Top

Bottom

Thickness of Plates

No. of Water Tubes

Int. Diar.

" "

Material of Water Tubes

No. of Screwed Stays in Firebox Sides

Eff. Diar.

Material

Are they fitted with Nuts inside?

Outside?

## SUPERHEATERS.

Description of Superheaters

Where situated

Which Boilers are connected to Superheaters?

Can Superheaters be shut off while Boilers are working?

No. of Safety Valves on Superheaters.

Diar.

Area

Are " " fitted with Easing Gear?

Date of Hydraulic Test

Test Pressure

Date when Safety Valves set

Pressure on Valves

## MAIN SKETCHES.

## REFRIGERATORS



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## MAIN STEAM PIPES.

No. of Lengths	3			
Material	Copper			
Brazed, Welded, or Seamless	Seamless			
Internal Diam.	5 1/2"			
Thickness	1/4"			
How are Flanges Secured?	Brazed			
Date of Hydraulic Test	25-4-17			
Test Pressure	400 lbs			

## REFRIGERATORS.

No. of Machines Makers

Description

When any part of the Vessel is to be used for the Carriage of Refrigerated Cargo the following particulars should be stated:—

Total Cubic Capacity of Refrigerated Spaces

Nature, Construction, Thickness, &amp;c., of Insulation

## SUPERHEATERS

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

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

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

Are Sluice Valves fitted on any of the Bulkheads of Insulated Spaces?

Are these fitted with Brass Non-return Valves?

Are they always accessible?

Are the Bilges and Bilge Rose Boxes always accessible?

Are the Steam Suctions to Bilges fitted with Non-return Valves?

Is the Machine Room effectively separated from Insulated Spaces?

" " properly Ventilated and Drained?

No. of Steam Cylinders, each Machine Diars.

" Compressors, " " "

Diam. of Crank Shafts No. of Cranks

Give particulars of Pumps in connection with Refrigerating Plant, and state whether worked by Refrigerating Machines or independently

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

Date of Test under Working Conditions

Fall of Temperature in Insulated Spaces

Time required to obtain this Result

Articles of Spare Gear for Refrigerating Plant carried on board



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## SKETCHES.

## ELECTRIC LIGHTING.

Installation Fitted by *Messrs H. L. Boothroyd Ltd. Liverpool*  
 No. and Description of Dynamos *Ship type Comp & 4 Multipolar (One Off)*  
 Makers of Dynamos *Messrs H. L. Boothroyd Ltd.*  
 Capacity " *180* Amperes, at *100* Volts, *255* Revols. per Min.  
 Current Alternating or Continuous *Continuous*  
 Position of Dynamos *In Engine Room*  
 " Main Switch Board *Near Dynamo*  
 No. of Circuits to which Switches are provided on Main Switch Board *Ten*

Particulars of these Circuits:—

No. of Circuit.	Name of Circuit.	Number of Lights.	Candle Power.	Current Required. Amps.	Size of Conductor.	Current Density.	Conductivity of Conductor.	Insulation Resistance per Mile.
1	<i>1st class accom</i>	<i>48</i>	<i>16</i>	<i>40</i>	<i>19/18</i>	<i>1000</i>	<i>100%</i>	<i>2.500 Meg</i>
2	<i>Machinery &amp; Engine room accom</i>	<i>38</i>	<i>16</i>	<i>20</i>	<i>4/16</i>	<i>1100</i>	"	"
3	<i>Lower deck accom</i>	<i>35</i>	<i>16</i>	<i>18</i>	<i>4/18</i>	<i>1200</i>	"	"
4	<i>Marconi</i>	—	—	<i>20</i>	<i>4/16</i>	<i>1100</i>	"	"
5	<i>Fore Cargo spaces</i>	<i>14</i>	<i>16</i>	<i>4</i>	<i>4/20</i>	<i>1000</i>	"	"
6	<i>amid</i>	<i>15</i>	<i>16</i>	<i>8</i>	<i>4/20</i>	<i>1000</i>	"	"
7	<i>Port Cargo spaces</i>	<i>14</i>	<i>16</i>	<i>4</i>	<i>4/20</i>	<i>1000</i>	"	"
8	<i>Main Deck &amp; S.O.B.</i>	<i>58</i>	<i>16</i>	<i>30</i>	<i>4/16</i>	<i>1250</i>	"	"
9	<i>Large blisters</i>	<i>24</i>	<i>32</i>	<i>28</i>	<i>2 1/4/18</i>	<i>1100</i>	"	"
10	<i>Navigation</i>	<i>3</i>	<i>32</i> <i>8</i>	<i>10</i>	<i>4/18</i>	<i>800</i>	"	"

Total No. of Lights *285* No. of Motors driving Fans &c. *3* No. of Heaters *2*

Current required for Motors and Heaters *Approx 11 1/2*



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Positions of Auxiliary Switch Boards, with No. of Switches on each *Engine casing*  
*3 switches on each of two sub switch boards*

Are Cut-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits

On Aux. " " each Auxiliary Circuit

Wherever a Cable is reduced in size

To each Lamp Circuit

To both Flow and Return Wires of all Circuits when the Double-Wire System is adopted

Are the Fuses of Standard Sizes?

Are all Switches and Cut-outs constructed of Non-inflammable Material?

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

Smallest Single Wire used, No. *18* S.W.G., Largest, No. *14* S.W.G.

How are Conductors in Engine and Boiler Spaces protected? *Armoured & Braided*

" " Saloons, State Rooms, &c., " ? *Lead covered*

What special protection is provided in the following cases?—

- (1) Conductors exposed to Heat or Damp *Tubing (Made watertight)*
- (2) " " passing through Bunkers or Cargo Spaces *" or Armoured & Braided*
- (3) " " Deck Beams or Bulkheads *Lead bushes & Watertight Glands*

Are all Joints in Cables properly soldered and thoroughly Insulated so that the efficiency of the Cables

is unimpaired? *No joints except Mechanical Ones*

Are all Joints in accessible positions, none being made in Bunkers or Cargo Spaces? *Yes*

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? *Two Megohms* Ohms.

Is the Installation supplied with a Voltmeter?

" " " an Ampere Meter?

Date of Trial of complete Installation *16/11/14* Duration of Trial *24 hours*



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## EVAPORATORS.

*None*

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. *33440* Type *Direct contact feed heater 20 1/2*  
 Makers *G. & J. Weir Ltd bathcart Glasgow*  
 Working Pressure \_\_\_\_\_ Test Pressure \_\_\_\_\_ Date of Test \_\_\_\_\_

## DONKEY

No. of Donkeys	<i>1 Feed</i>	<i>1 Ballast Donkey</i>
Type	<i>Weirs Vertical</i>	<i>Vertical</i>
Makers	<i>G. &amp; J. Weir</i>	<i>Dawson &amp; Downie</i>
Single or Duplex	<i>Duplex</i>	<i>Duplex</i>
" Double-Acting	<i>Double Acting</i>	<i>Double Acting</i>
Diar. of Steam Cylinders	<i>9 1/2"</i>	<i>8"</i>
" Pumps	<i>4"</i>	<i>9"</i>
Stroke of "	<i>18"</i>	<i>8"</i>
Where do they pump from?	<i>Boilers. Sea. Heater Condenser &amp; Hotwell</i>	<i>all tanks &amp; Sea. Bilges &amp; special bilge</i>

Where do they discharge to? *Boilers*  
*Overboard & forward  
& after tanks Main  
Condenser & deck*

Capacity, Tons per Hour of Ballast Donkey

Diar. of Pipe required by Rule for

## FEED WATER FILTERS.

No. \_\_\_\_\_ Type *6 Filter screens in tank size 4' x 2' x 2'.*  
 Makers *Galedon & E. Co.*  
 Working Pressure \_\_\_\_\_ Test Pressure \_\_\_\_\_ Date of Test \_\_\_\_\_

## FORCED DRAUGHT FANS.

*None*

No. of Fans. \_\_\_\_\_ Diar. \_\_\_\_\_ Revols. per min. \_\_\_\_\_  
 How are Fans driven? \_\_\_\_\_

## PUMPS.

<i>1 General Service &amp; Ash Ejector pump Vertical</i>	<i>1 Fresh Water Pump Vertical</i>	<i>1 Donkey Boiler Pump Vertical</i>
<i>Dawson &amp; Downie</i>	<i>Dawson &amp; Downie</i>	<i>Dawson &amp; Downie</i>
<i>Duplex</i>	<i>Duplex</i>	<i>Duplex</i>
<i>Double Acting</i>	<i>Double Acting</i>	<i>Double Acting</i>
<i>8"</i>	<i>4"</i>	<i>4 1/2"</i>
<i>5"</i>	<i>4"</i>	<i>3"</i>
<i>8"</i>	<i>5"</i>	<i>6"</i>
<i>Hotwell &amp; Condenser Sea. Bilges. tanks. &amp; boilers</i>	<i>Engine Room Tank</i>	<i>Sea. Filter tanks &amp; Ballast Tanks</i>
<i>Ash ejector. Auxiliary feed for Main &amp; donkey boilers. Overboard. Deck &amp; Sanitary tank</i>	<i>Fresh water tank &amp; Filter tank</i>	<i>Donkey boiler &amp; Sanitary tank</i>
largest Ballast Tank <i>3 1/2"</i>	Velocity of Water in Pipe _____	

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## SPARE GEAR.

No. of Top End Bolts	2. x Nuts	No. of Bot. End Bolts	2. x Nuts
" Main Bearing Bolts	2. x Nuts	" Coupling Bolts	2. Sets x Nuts
" Cylr. Cover Bolts Studs	12. x Nuts	" Valve Chest Cover Bolts Studs	
" Feed Pump Valves	2. x Seats	" Bilge Pump Valves	2. x Seats
" Safety Valve Springs	3. (2 Main & 1 Dky Boiler)	" Fire Bars	1. Lon
" Piston Rings		" Junk Ring Bolts Studs	12. x Nuts
" Piston Rods		" Connecting Rods	
" Valve Spindles		" Air Pump "	
" Air Pump Valves	1. Set	" " " Buckets	
" Crank Pin Bushes		" Crosshead Bushes	
" Crank Shafts		" Propeller Shafts	
" Propellers		" " Blades	4. Bronze
" Boiler Tubes	6 Plain (Main Boiler)	" Condenser Tubes	24. x 48 Ferrules with Packing 6 Nuts each size used for Boiler

## OTHER ARTICLES OF SPARE GEAR:—

1. Lon Furnace Bars. 12 Wing Bars for Main Boilers
2. Feed Pump Valves & Seats & Weirs Pumps. 2 Feed Check Valves Main Boilers
- 1 Feed check Valve Dky Boilers. 1 Relief Valve Spring for feed Pump Main Eng
- 1 Set of Furnace Door & Furnace Front Raffle Plates.
3. Relief Valve springs for Cylrs & Casings. 2 Dose Gauge Glasses with Woodite Washers (Main Boilers)
- 6 Gauge Glasses with Woodite Washers (Dky Boiler). 3 Lube Stoppers Main Boilers
- Extra Spares ordered by Admiralty
4. Cast Steel Propeller Blades
- 2 Eccentric Strap Bolts & Nuts (Main Engine)
- 1 Set Piston & Pump Rings for each Aux Engine or Pump.

## GENERAL CONSTRUCTION.

Have all the Requirements under Sections 31 and 32 of the Rules been complied with? *Yes*

If not, give details of the points of difference, and state when these were sanctioned by the Chief

Surveyor.

Are the Steam Pumping Arrangements in accordance with the approved Plan? *Yes*

If not, state in what respects they differ and when such differences were sanctioned by the Chief

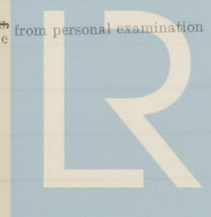
Surveyor

Are the Materials used in the Construction of Engines and Boilers, so far as could be seen, sound and trustworthy? *Yes*

Is the Workmanship throughout thoroughly satisfactory? *Yes*

The above correctly describes the Machinery of the S.S. "Goodwin"

as ascertained by me from personal examination



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



Fees—

## MAIN BOILERS.

H.S.

Sq. ft.

G.S.

## DONKEY BOILERS.

H.S.

Sq. ft.

G.S.

£

## ENGINES.

L.P.C.

Cub. ft.

Testing, &amp;c.

£

Expenses

Total

£

It is submitted that this Report be approved,

Chief Surveyor.

Approved by the Committee,

Fees applied for

Fees paid

Secretary.



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