

No. 1687

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. 1859 No. in Register Book 3172

S.S. *"Atlantic"*

Makers of Engines

*Armstrong Whitworth & Co.*  
*(Armstrong Submarine)*

Works No.

*M.E. 54*

*Auxiliary*

Makers of ~~Main~~ Boilers

*Armstrong Whitworth & Co.*

Works No.

*M.E. 54*

Makers of Donkey Boiler

*None fitted*

Works No.

MACHINERY.



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004440-004449-0164



No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. 1859

No. in Register Book 3172

Received at Head Office

21<sup>st</sup> October 1925

*m/v. Atlantic*

Surveyor's Report on the New Engines, Boilers, and Auxiliary

Machinery of the <sup>Single Triple</sup> ~~Gwin Quadruple~~ Screw *Armstrong -*  
*Sulzer - 2 cycle - Single - acting -*  
*6 Cylinder - Diesel Engine*

Official No.

*None*

Port of Registry

*Bergen*

Registered Owners

*W. T. John*

Engines Built by

*Sir W. G. Armstrong Whitworth & Co.*

at

*Newcastle-on-Tyne*

Boilers Built by

*Sir W. G. Armstrong Whitworth & Co.*

at

*Newcastle-on-Tyne*

Donkey

"

*None fitted*

at

Date of Completion

*20<sup>th</sup> August 1925*

First Visit

*9/4/24*

Last Visit

*8/8/25*

Total Visits

*272*

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## RECIPROCATING ENGINES

Works No. *MES 54* No. of Sets *One* Description *Armstrong*  
*Sulzer - 2 cycle - Single - acting*  
*glinder - Diesel engines.*

No. of Cylinders each Engine *6* No. of Cranks *6*  
 Diars. of Cylinders *600 mm.* Stroke *1060 mm.*

Cubic feet in each I.P. Cylinder  
 Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cyl.? *Yes*  
 " " " each Receiver?  
 Type of I.P. Valves,  
 1st I.P.,  
 2nd I.P.,  
 I.P.,  
 Valve Gear  
 Condenser Cooling Surface sq. ft.  
 Diameter of Piston Rods (plain part) *150 mm* Screwed part (bottom of thread)  
 Material *Forged steel*  
 Diar. of Connecting Rods (smallest part) *165 mm* Material *Forged steel*  
 " Crosshead Gudgeons *240 mm* Length of Bearing *440 mm* Material *forged steel*  
 No. of Crosshead Bolts (each) *4* Diar. over Thrd. *1 7/8"* Thlds. per inch *4 1/2* Material *Forged steel*  
 " Crank Pin " *2* " *2 7/8"* " *3 1/2* " *do.*  
 " Main Bearings *8* Lengths *370 mm*  
 " Bolts in each *4* Diar. over Thread *2"* Threads per inch - Material *Steel*  
 " Holding Down Bolts, each Engine *80* Diar. *1 3/4"* No. of Metal Chocks *80*  
 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?

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

Pressure in 1st I.P. Receiver,

Speed on Trial

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

data:—

Builders' estimated B.H.P. }

Estimated Speed

*Openhaw works, Manchester*  
*do*  
*do*  
*do*  
*Armstrong Whitworth & Co. Elwood*  
*do*  
*do*  
*do*  
*3-8-25*  
*8-8-25*  
*North Sea*  
*Yes*  
*2250 -*  
*110*  
*11 Knots*  
*2250 -*  
*110*



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The British Corporation for the Survey and Registry of Shipping.

Particulars required for Register Book and Machinery Classification Certificate

of the *M/V. "Atlantic"*  
(ENGINE M.E. 54)

ENGINES—Description, *Armstrong Sulzer, 6 cylinder direct acting reversible type.*

*Two*

Cycle,

Single or Double-Acting

Name of Makers, *Sir W. G. Armstrong Whitworth & Co. Ltd.*

Where and When Made, *Scotswood Works - 1925*

No. of Working Cylinders, *6* Diar., *600 m/m* Stroke, *1060 m/m* Revs., *110*

Diar. of Shafts—Crank, *405 m/m* Intermediate, *12.125* Propeller, *14.25*

Propeller—Diar., *14'-3"* Surface, *72.5  $\phi$*  Pitch, *uniform 11'-4"*

COMPRESSED AIR PLANT—

No. of Starting Air Compressors, *2* No. of Stages, *3*

Where and When Made, *Weirs Glasgow 1925*

No. of Fuel Injection Air Compressors, *2* No. of Stages, *3*

Where and When Made, *Sir W. G. Armstrong Whitworth & Co. Ltd. Scotswood*

No. of Scavenging Air Pumps, *1* Diar., *-* Stroke, *-*

Method of Drive, *Two turbines*

No. of Starting Air Bottles or Reservoirs, *8* Pressure, *1000* Capacity, *25  $\phi$*

No. of Fuel Injection Air Bottles, *1* Pressure, *1000* Capacity, *8.5  $\phi$*

DONKEY BOILER—Description, *Marine multitubular*

Name of Makers, *Sir W. G. Armstrong Whitworth & Co. Ltd.*

Where and When Made, *Elswick Works - 1925*

No. of Boilers, *2* No. of Furnaces in each, *3*

Greatest Internal Diameter, *13'-9  $\frac{13}{16}$ "* Length or Height, *11'-0"*

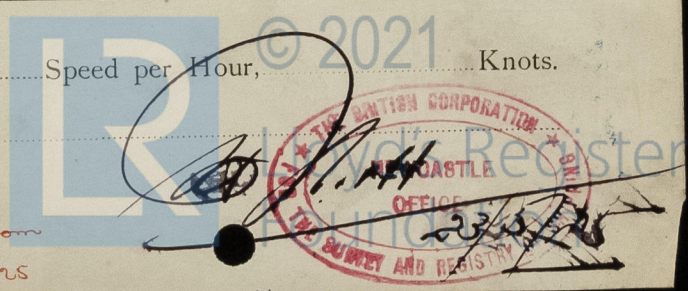
Total Heating Surface, *3606  $\phi$*  Total Grate Surface, *oil fired*

Working Pressure, *180 lbs/ $\square$ "*

Trial Date, *August 1925* Speed per Hour, *-* Knots.

Brake Indicated Horse Power,

*2 generators of 25 kilowatts each. 50  
1 " " 8 " 8  
58. see letter from  
Newcastle 9/7/25*





# No TURBINE ENGINES.

Works No.

Type of Turbines

No. of H.P. Turbines

No. of I.P.

No. of L.P.

No. of Astern

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

Is Single or Double Reduction Gear employed?

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

" " I.P. " "

" " L.P. " "

" " 1st Reduction Shaft

" " 2nd "

" " Propeller Shaft

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

Speed on Trial

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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## TURBINE ENGINES

No. of Turbine	Type of Turbine	No. of H.P. Turbine	No. of I.H.P.	No. of A.S.H.P.

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

Is single or Double Reduction gear employed?

Revolutions per min. of H.P. Turbine at Full Power

" " " " " "

" " " " " "

Is Reduction gear

" " " " " "

Turbine shaft

Total Shaft Horse Power

Date of Harbortrial

" Trial Trip

Trials run at

Speed on Trial

Turbine shafts forced by

Wheels forced on case by

Reduction gear shafts forced by

Wheels forced on case by

DESCRIPTION OF INSTALLATION

## TURBO-ELECTRIC PROPELLING MACHINERY

No. of Turbo-Generating sets	Capacity of each	Generator	Motor	Propeller

Type of Turbine 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

Revolutions per min. of Generators at Full Power

" " " " " "

" " " " " "

" " " " " "

Total Shaft Horse Power

Date of Harbortrial

" Trial Trip



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# *No.* 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

Revs. per min. of Generators at Full Power

" " Motors "

" " Propellers "

Total Shaft Horse Power "

Date of Harbour Trial

" Trial Trip

Trials run at

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



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120

Of what Material are the Alien Bourgeoisie of

DUPLICATE REGISTRATION

# Update

Il no, 7022-43-10 is adopted.

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## SHAFTING.

Are the Crank Shafts Built or Solid?

*Semi-Built*

No. of Lengths in each

*2*

Angle of Cranks

*120°*

Diar. by Rule

Actual

*405<sup>m</sup>/m*

In Way of Webs

*406<sup>m</sup>/m*

" of Crank Pins

*405<sup>m</sup>/m*

Length between Webs

*304<sup>m</sup>/m*

Greatest Width of Crank Webs

*776<sup>m</sup>/m*

Thickness

*290<sup>m</sup>/m*

Least " "

*430<sup>m</sup>/m*

"

*290<sup>m</sup>/m*

Diar. of Keys in Crank Webs

*40<sup>m</sup>/m*

Length

*180<sup>m</sup>/m*

" Dowels in Crank Pins

*40<sup>m</sup>/m*

Length

*180*

Screwed or Plain

*plain*

No. of Bolts each Coupling

*12*

Diar. at Mid Length

Diar. of Pitch Circle

*590<sup>m</sup>/m*

Greatest Distance from Edge of Main Bearing to Crank Web

*25<sup>m</sup>/m*

Type of Thrust Blocks

*Mitchell*

No. " Rings

*One ahead & one astern*

Diar. of Thrust Shafts at bottom of Collars

*396<sup>m</sup>/m*

No. of Collars

*One*

" " Forward Coupling

*720<sup>m</sup>/m*

At Aft Coupling

*720<sup>m</sup>/m*

Diar. of Intermediate Shafting by Rule

Actual

*12.125*

No. of Lengths

*One*

No. of Bolts, each Coupling

*12*

Diar. at Mid Length

*296*

Diar. of Pitch Circle

*590<sup>m</sup>/m*

Diar. of Propeller Shafts by Rule

Actual

*14.25*

At Couplings

*720<sup>m</sup>/m*

Are Propeller Shafts fitted with Continuous Brass Liners?

*Yes*

Diar. over Liners

*16"*

Length of After Bearings

*15.5"*

Of what Material are the After Bearings composed?

*Cast Iron with white metal lining*

Are Means provided for lubricating the After Bearings with Oil?

*Yes*

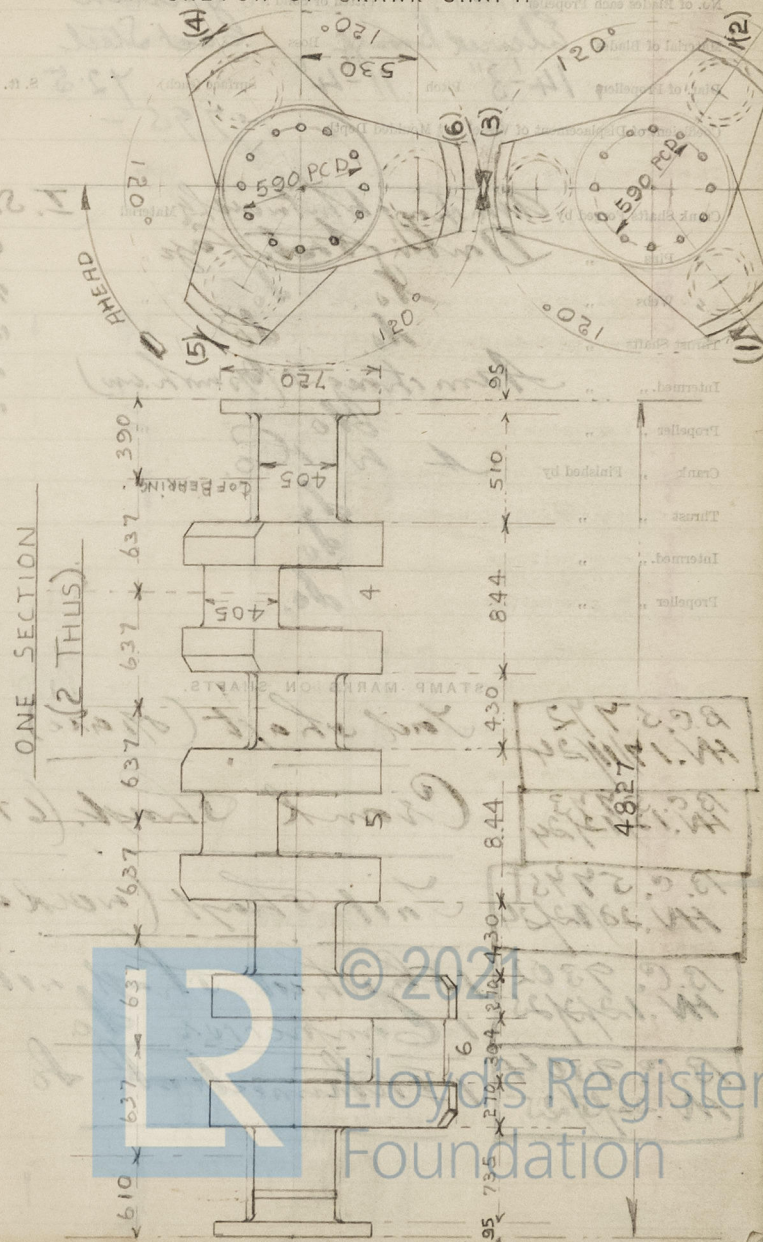
" " to prevent Sea Water entering the Stern Tubes?

*No*

\* If so, what Type is adopted?

*see also letter 21-2-44 DM**HEAVY SHAFT FITTED TO REDUCE VIBRATION. DECEMBER 4/8/39.*

## SKETCH OF CRANK SHAFT.





No. of Blades each Propeller

4

Fitted or Solid?

Fitted  
Cast Steel

Material of Blades

Electric Bronze

Boss

Diam. of Propeller

14'-3"

Pitch

11'-4"

Surface (each)

72.5 S. ft.

Coefficient of Displacement of Vessel at  $\frac{1}{2}$  Moulded Depth

.795

Crank Shafts Forged by

Armstrong, Whitworth &amp; Co.

Material

I. Steel

Pins

Dunlop &amp; Co. forgers

"

Webs

do. do.

"

Thrust Shafts

do. do.

"

Intermed.,

Armstrong's (Glasgow)

"

Propeller

do.

"

Crank, Finished by

A. W. Co.

Thrust

do.

Intermed.,

do.

Propeller

do.

## STAMP MARKS ON SHAFTS.

B.C. 5442  
H.V. 17/11/24

Tail shaft (static)

B.C. 5443  
H.V. 12/12/24

Crank Shaft. (6 Thrust)

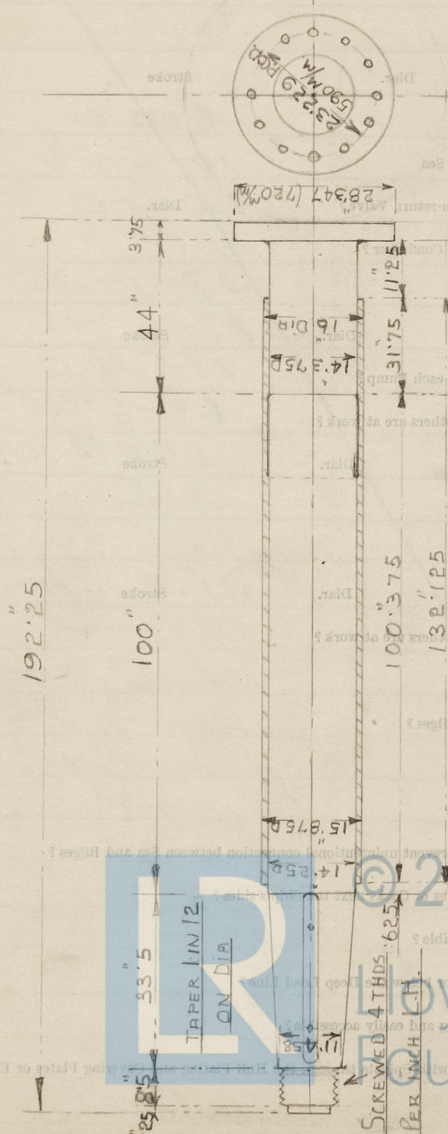
B.C. 5445  
H.V. 28/12/24

Tail shaft (working)

B.C. 9302  
H.V. 12/2/25Flywheel shaft with  
1 Compressor do.B.C. 9304  
H.V. 24/3/25

1 Intermediate do.

## SKETCH OF PROPELLER SHAFT.



July 21, 1941

This shaft being fitted to cover canvas speed on etc.

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## PUMPS, ETC.

see page No. 33!

No. of Air Pumps

Diar.

Stroke

Worked by Main or Independent Engines?

No. of Circulating Pumps

Diar.

Stroke

Type of

Diar. of Suction from Sea

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

Diar.

What other Pumps can circulate through Condenser?

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

Diar.

Stroke

What other Pumps can feed the Boilers?

No. of Bilge Pumps on Main Engine

Diar.

Stroke

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

No. of Independent Bilge Pumps

What other Pumps can draw from the Bilges?

Are all Bilge Suctions fitted with Roses?

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

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

Are they placed so as to be easily accessible?

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

Are they fitted direct to the Hull Plating and easily accessible?

Are all Blow-off Cocks or Valves fitted with Spigots through the Hull Plating and Covering Plates or Flanges on the Outside?

## BOILERS

Works No.

No. of Boilers

Single or Double-ended

No. of Furnaces in each

Type of Furnaces

Date when first approved

Approved Working Pressure

Hydraulic Test Pressure

Date of Hydraulic Test

When safety Valves set

Pressure at which Valves were set

Date of Accumulation Test

Maximum Pressure under Accumulation Test

System of Drafting

Can Boilers be worked separately?

Makers of Plates

Stay Bars

Ribs

Furnaces

Greatest Internal Diam. of Boilers

Length

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## BOILERS.

(Auxiliary)

M.E. 54

Cylindrical-multitubular

Single

3

Morrison

10-5-24

180 lbs. □

320 " "

27-1-25

19-6-25

185 lb. □

19-6-25

190 lb. □

Kathode

Y.C.

Guthrie Glasgow

Steel Co. Scotland  
Rust " Glasgow

Marshall &amp; Co "

13'-9 1/2"

11'-0"

1803

—

3"

Works No.

No. of Boilers 2 Type

Single or Double-ended

No. of Furnaces in each

Type of Furnaces

Date when Plan approved

Approved Working Pressure

Hydraulic Test Pressure

Date of Hydraulic Test

" when Safety Valves set

Pressure at which Valves were set

Date of Accumulation Test

Maximum Pressure under Accumulation Test

System of Draught

Can Boilers be worked separately?

Makers of Plates

" Stay Bars

" Rivets

" Furnaces

Greatest Internal Diam. of Boilers

" " Length "

Square Feet of Heating Surface each Boiler

" " Grate " "

No. of Safety Valves each Boiler

Diam.

Are the Safety Valves fitted with Easing Gear?

No. of Pressure Gauges, each Boiler

No. of Water Gauges

" Test Cocks

" Salinometer Cocks



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Thickness of End Plates in Steam Space Approved

" " " " " in Boilers

Pitch of Steam Space Stays

Diar. " " " " " Approved

Threads per Inch

" " " " " 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 Plates Approved

" " " " " in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at

Diar. of Stays Approved

Threads per Inch

" " " in Boilers

Material "

Are Stays fitted with Nuts outside?

Thickness of Back End Plates at Bottom Approved

" " " " " in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in " "

Thickness of Front End Plates at Bottom Approved

" " " " " in Boilers

No. of Longitudinal Stays in Spaces between Furnaces

$1\frac{3}{32}$ "  
 $22\frac{1}{2} \times 19$ "

6

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

Steel

Double nut & washer.

$11\frac{1}{2} \times 1$ "

None

"

$\frac{27}{32}$ "

$\frac{27}{32}$ " manhole for emitting

$15 \times 8\frac{3}{4}$ "

Steel

Yes.

$\frac{27}{32}$ "

$15 \times 8\frac{3}{4}$ "

None - use manhole for hydraulic emitting

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

None



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Diag. of Stays Approved Threads per Inch ✓

" " in Boilers ✓

Material " ✓

Thickness of Front Tube Plates Approved

" " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

Thickness of Doublings in " " "

" Stay Tubes at " " "

Are Stay Tubes fitted with Nuts at Front End?

Thickness of Back Tube Plates Approved

" " " in Boilers

Pitch of Stay Tubes in Back Tube Plates

" Plain "

Thickness of Stay Tubes

" Plain "

External Diag. of Tubes

Material "

Thickness of Furnace Plates Approved

" " " in Boilers

Smallest outside Diag. of Furnaces

Length between Tube Plates

Width of Combustion Chambers (Front to Back)

Thickness of " " Tops Approved

" " " in Boilers

Pitch of Screwed Stays in C.C. Tops

$1\frac{1}{2}"$   
 $14\frac{1}{2}" \times 9"$   
*None fitted*  
 $3\frac{1}{16}"$   
*No*

$\frac{3}{4}"$   
 $11\frac{1}{4}" \times 9"$  *man pitch*  
 $4\frac{1}{2}" \times 4\frac{1}{2}"$   
 $\frac{3}{16}" - \frac{1}{4}" - \frac{5}{16}"$   
 $8 \text{ N.C.}$   
 $3\frac{1}{4}"$   
*Iron*

$\frac{17}{32}"$   
 $3' - 5\frac{1}{16}"$   
 $7' - 3\frac{5}{8}"$   
 $2' - 8\frac{1}{2}"$

$\frac{1}{16}"$   
 $10\frac{1}{4}" \times 8\frac{3}{4}"$

Diag. of Screwed Stays Approved

" " in Boilers

Material "

Thickness of Combustion Chamber Plates Approved

" " " in Boilers

Pitch of Screwed Stays in C.C. Tops

Diag. " Approved

" " in Boilers

Material "

Thickness of Combustion Chamber Plates Approved

" " " in Boilers

Pitch of Screwed Stays in C.C. Backs

Diag. " Approved

" " in Boilers

Material "

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

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

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Diar. of Screwed Stays Approved

Threads per Inch

9

" " " in Boilers

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

9

Material " "

Steel

Thickness of Combustion Chamber Sides Approved

" " " " in Boilers

 $\frac{1}{2}"$ 

Pitch of Screwed Stays in C.O. Sides

 $10\frac{1}{4}" \times 8\frac{3}{4}"$ 

Diar. " " Approved

Threads per Inch

9

" " " in Boilers

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

9

Material " "

Steel

Thickness of Combustion Chamber Backs Approved

" " " in Boilers

 $\frac{23}{32}"$ 

Pitch of Screwed Stays in C.O. Backs

 $11 \times 8\frac{3}{4}"$ 

Diar. " " Approved

Threads per Inch

9

" " " in Boilers

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

9

Material " "

Steel

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

Yes.

Thickness of Combustion Chamber Bottoms

1"

No. of Girders over each Wing Chamber

4

" " " Centre "

2

Depth and Thickness of Girders

 $7\frac{1}{2} \times 8" (2 \text{ plates})$ 

Material of Girders

Steel

No. of Stays in each

2

No. of Tubes, each Boiler

154

Size of Lower Manholes

 $16 \times 12"$ 

VERTICAL DONKEY BOILERS

No. of Boilers

Type

Height

Greatest Int. Diam.

Height of Boiler Crown above Fire Grate

Are Boiler Crowns Flat or Dished?

Internal Radius of Dished Ends

Description of Stays in Boiler Crowns

Diam. of Rivet Holes

Height of Rivet Crowns above Fire Grate

Are Rivet Crowns Flat or Dished?

Internal Radius of Dished Crowns

Material

Diam.

No. of Crown Stays

External Diam. of Rivet at Top

Bottom

Thickness

Ext. Diam.

No. of Water Tubes

Material of Water Tubes

Size of Manhole in Shell

Dimensions of Compensating Pipe

Grate Surface

Heating Surface, each Boiler

No. SUPERHEATERS

Description of Superheaters

Where situated?

Which Boilers are connected to superheaters?

Can Superheaters be shut off while Boilers are working?

Are Superheaters on each Boiler?

Are they fitted with heating coils?

Test Pressure

State when Safety Valves set



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# No. 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	

# No. 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

# No. 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 Pipes	
Material	
Joined, Welded or Seamed	
Internal Diar.	
Thickness	
How are Flanges secured?	
Date of Hydraulic Test	
Test Pressure	
No. of Pipes	
Material	
Joined, Welded or Seamed	
Internal Diar.	
Thickness	
How are Flanges secured?	
Date of Hydraulic Test	
Test Pressure	



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# MAIN STEAM PIPES.

*No. - auxiliary steam pipes  
tested to requirements.*

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

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diam.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure



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## EVAPORATORS.

No. 1 Type *John Kirkaldy* 20 Tons per Day  
 Makers *John Kirkaldy*  
 Working Pressure Test Pressure Date of Test  
 Date of Test of Safety Valves under Steam *19-6-25*

FEED WATER HEATERS. *None*

No. Type  
 Makers  
 Working Pressure Test Pressure Date of Test

## FEED WATER FILTERS.

No. 1 Type *Sponge Box* Size  
 Makers *Armstrong Whitworth*  
 Working Pressure Test Pressure Date of Test

## LIST OF DONKEY PUMPS.

- 1 Weirs  $8\frac{1}{2} \times 6 \times 13$  Boilers Feed
- 1 "  $5\frac{1}{2} \times 6 \times 15$  oil Transfer
- 1 "  $5\frac{1}{2} \times 6 \times 15$  Lubricating oil
- 1 "  $5\frac{1}{2} \times 6 \times 15$  Cooling water
- 1 Lamonts  $7 \times 5 \times 8$  Vent Dup Aux Feed
- 1 Dawson & Downie  $7 \times 9 \times 8$  Vent Dup Ballast
- 1 do  $6 \times 6 \times 6$  " " Bilge
- 1 Clarke Chapman's  $9\frac{1}{2} \times 18 \times 12$  air Pump
- 1 Mathew Pauls  $6\frac{1}{2}$ " Centrifugal Circulating pump for Winch Condenser
- 1 Drysdale's  $5$ " Centrifugal Circulating pump for Cooling water
- 2 Weirs Aux Air Compressors, Capacity 130 cub ft per minute each
- 1 Brown Boveri Scavenging Blower with two Turbines Cap = 12250 cub ft per air per minute



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## SPARE GEAR.

No. of Top End Bolts.	No. of Bot. End Bolts.	No. of Cylinder Cover Studs
7	4	Set for 1 cover
" Coupling Bolts	" Main Bearing Bolts 4	" Valve Chest "
" Junk Ring Bolts	" Feed Pump Valves	" Bilge Pump Valves
" H.P. Piston Rings	" I.P. Piston Rings	" L.P. Piston Rings
" " Springs	" " Springs	" " Springs
" Safety Valve 2	" Fire Bars	" Feed Check Valves 2
" Piston Rods	" Connecting Rods	" Valve Spindles
" Air Pump Rods	" Air Pump Buckets	" Air Pump Valves
" Cir. "	" Cir. "	" Cir. "
" Crank Shafts	" Crank Pin Bushes	" Crosshead Bushes
" Propeller Shafts 1	" Propellers	" Propeller Blades 4
" Boiler Tubes 24	" Condenser Tubes 36	" Condenser Ferrules 72

## OTHER ARTICLES OF SPARE GEAR:—

- 2 Cylinder Covers complete with valves, seats, springs
- 1 Set of valves, seats & springs for one cylinder
- 1 " " fuel needle valves for 3 cylinders
- 2 Pistons complete with rings, studs & nuts
- 2 Sets of piston rings for one piston
- 1 Complete set of main skew wheels
- 1 Set of crankshaft coupling bolts
- 1 " " intermediate shaft coupling bolts
- 1 Pair main bearing brasses
- 1 Cylinder liner
- 1 Set of scavenge valves
- 1 Fuel pump complete
- 2 Strainers for lubricating oil
- 1 " " fuel oil

- 2 Fuel cams, 4 rollers & pins
- 2 Return valves in delivery piping
- 6 Pulveriser plates for fuel valves & cone ends
- 6 Fuel spray plates
- 2 Oil Wiper rings complete for two cylinders
- Piston cooling pipes for two cylinders
- Crosshead lubricating pipes for two top ends
- Pipes for fuel delivery, blast & air
- Set of valves for one crosshead lubricating pump
- 10 Tubes for oil coolers
- 1/2 Set of copper joint rings for cylinder covers
- 1 Propeller shaft
- 4 " blades
- 1 Set of studs & nuts for one propeller blade
- 1 " " thrust pads for the ahead thrust

Main Engine Air Compressor

- 2 Complete sets of piston rings for each piston
- 1/2 Set of valves for 1<sup>st</sup>, 2<sup>nd</sup> & 3<sup>rd</sup> stages
- 1 Extra set of valves for 3<sup>rd</sup> stage
- 20 Tubes for coolers

Also spares for Aux Compressor, Oil Burning Installation, Boiler Feed Pumps, Ballast Pump, G. S. Pump, Bilge Pump, F. L. Pump, Pumps for Aux Condenser, Cylinder Jacket & Piston Cooling Water & Scavenge Blower







# "ATLANTIC" -

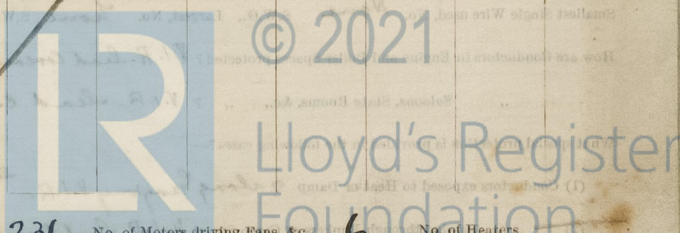
## ATTACHMENT TO BRITISH CORPORATION SHEET.

LETTER	NAME OF CIRCUIT	LAMPS							MAGICAL FIRE	FANS		DATA				
		100 WATT VACUUM	100 WATT 1/2 WATT	60 WATT M.F.	30 WATT M.F.	20 WATT M.F.	16 CP CF	8CP CF		9" VENT FAN	12" CABIN FAN	CURRENT REQ IN AMPS	SIZE OF CONDUCTOR N°/DIA.	CURRENT DENSITY IN AMPS/D.	CONDUCTIVITY OF CONDUCTOR	INSULATION RESISTANCE PER MILE
A	ENGINE & BOILER RM LIGHTS		15		31		7					26.003	7/036	3649	100% PURE COPPER	2500 MEGOHMS
B	AFT ACCOMMODATION	1			60		11			2	3	27.248	7/052	1841	"	"
C	MIDSHIP ACCOMMODATION	1	4		48	4	23		1		4	33.1	19/052	821	"	"
D	NAVIGATION	5			3		9	6				12.079	7/064	536	"	"
E	PUMP ROOMS			8								13.458	7/064	598	"	"
G	WORKSHOP MOTOR											30	7/052	2027	"	"
H	CO <sub>2</sub> MACHINE											75	19/064	1227	"	"
J	WIRELESS											25	7/064	1110	"	"
K	STEERING GEAR											204	37/083	1020	"	"
F	OIL PURIFIER MOTOR											166	7/029	3589	"	"
TOTALS		7	19	8	142	4	50	6	1	2	7					



## ELECTRIC LIGHTING.

Installation Fitted by *Sir W. G. Armstrong Whitworth & Co. Ltd.*  
 No. and Description of Dynamos *2 in two. Compound wound - 25 K.W. each.*  
 Makers of Dynamos *Messrs. W. H. Allen & Sons.*  
 Capacity *228* Amperes, at *110* Volts, *1400* Revols. per Min.  
 Current Alternating or Continuous *Continuous*  
 Single or Double Wire System *Double*  
 Position of Dynamos *On flat at after end of Engine Room.*  
 „ Main Switch Board *on flat at after end of Engine Room*  
 No. of Circuits to which Switches are provided on Main Switch Board *10 (Ten) circuits*  
 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>see attached sheet</i> 							
Total No. of Lights	<i>236</i>	No. of Motors driving Fans, &c.	<i>6</i>	No. of Heaters			

Current required for Motors and Heaters *327.6 exclusive of W.I.T. gear.*



Positions of Auxiliary Switch Boards, with No. of Switches on each Section Boxes; 1-2 way in Bridge. Space; 1-2 way in Crew's Quarters; 1-2 way in Pantry Bridge Deck. Distribution boxes 1-6 way in Wheel House, 1-8 way in Bridge Space; 1-10 way in Bridge Space; 1-12 way in Pantry Bridge Deck; 1-12 way in Crew's Quarters, 1-12 way in Engine Room.

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

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. None S.W.G., Largest, No. None S.W.G.

How are Conductors in Engine and Boiler Spaces protected? V.I.R. lead covered & armoured

" Saloons, State Rooms, &c., " ? V.I.R. lead covered

What special protection is provided in the following cases?—

- (1) Conductors exposed to Heat or Damp & along Gangway V.I.R. lead covered & armoured.
- (2) " passing through Bunkers or Cargo Spaces V.I.R. lead covered & armoured.
- (3) " " Deck Beams or Bulkheads W.T. deck tubes, W.T. Glands, lead lashed cables.

Are all Joints in Cables properly soldered and thoroughly insulated so that the efficiency of the Cables is unimpaired? None made

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?

900,000

Ohms.

Is the Installation supplied with a Voltmeter?

Yes

" " " an Ampere Meter?

Yes

Date of Trial of complete Installation 4th Aug 1925. Duration of Trial

6 hours.



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## 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.

as ascertained by <sup>us</sup> <sub>me</sub> from personal examination

*m.v. "Atlantic"*  
*Eng. H. H. H.*  
*W. H. H. H.*

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

Fees—

		£	s.	d.
<i>Amidships</i>				
MAIN BOILERS.				
H.S.	<i>3606</i> Sq. ft.	:	:	:
G.S.	<i>oil furn.</i> "	:	:	:
DONKEY BOILERS.				
H.S.	— Sq. ft.	:	:	:
G.S.	— "	:	:	:
<i>Disil</i> ENGINES.				
L.P.O.	Cub. ft.	:	:	:
Testing, &c. ...				
Expenses ...				
Total ...				

It is submitted that this Report be approved,

*Jas Barr for Chief Surveyor.*

Approved by the Committee for the Class of M.B.S.\* on the *18<sup>th</sup> November 1915*

Fees advised

Fees paid



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Secretary.



## GENERAL CONSTRUCTION

3500

50.0

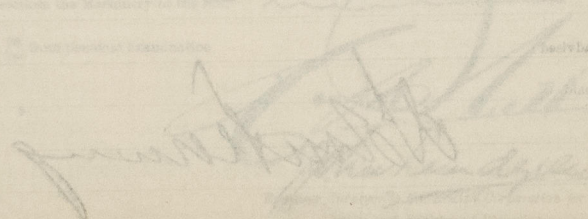
50.0

Total

It is submitted that this Report be approved.

Approved by the Committee for the City of M.B.S. of the

M. K. "Atlantic"





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