

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

Makers of ~~Main~~ Auxiliary Boilers

Auxiliary

Armstrong Whitworth & Co

Works No.

M.E. 54

Makers of Donkey Boiler

None fitted

Works No.

MACHINERY.



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THE BRITISH CORPORATION FOR THE SURVEY

AND

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Report No. 1859 No. in Register Book 3172

Received at Head Office 21st October 1925

msv. Atlantic

Surveyor's Report on the New Engines, Boilers, and Auxiliary Machinery of the ^{Single Triple} ~~Gwin Quadruple~~ Screw Armstrong - Sutzor - 2 cycle - Single - acting - 6 Cylinder - Diesel Engine

Official No. None Port of Registry Bergen

Registered Owners W. Johnson

Engines Built by Sir W. G. Armstrong Whitworth & Co. at Newcastle-on-Tyne

~~Main~~ Boilers Built by Sir W. G. Armstrong Whitworth & Co. at Newcastle-on-Tyne

Donkey " " None fitted

Date of Completion 20 August 1925

First Visit 9/4/24 Last Visit 8/8/25 Total Visits 272



RECIPROCATING ENGINES

Works No. MES 4 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 Cylr.? 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" Thrd. 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

Openhaw works, Manchester

Piston " "

do do

Crossheads, " "

do do

Connecting Rods, Finished by

Armstrong Whitworth & Co. Elwood

Piston " "

do do

Crossheads, " "

do do

Date of Harbour Trial

3-8-25

" Trial Trip

8-8-25

Trials run at

North Sea

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

Yes

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

2250 -

Revs. per min.

110

Pressure in 1st I.P. Receiver, _____

lbs., 2nd I.P., _____

lbs., I.P., _____

lbs., Vacuum, _____

ins.

Speed on Trial

11 Knots

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

data:—

Builders' estimated B.H.P. }

2250.

Revs. per min. _____

Estimated Speed _____



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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, *Seatonwood 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 φ* 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. Seatonwood*
 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 φ*
 No. of Fuel Injection Air Bottles, *1* Pressure, *1000* Capacity, *8.5 φ*

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'-9¹³/₁₆"* Length or Height, *11'-0"*
 Total Heating Surface, *3606 φ* Total Grate Surface, *oil fired*
 Working Pressure, *180 lbs/□"*

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

Brake Horse Power, _____
 Indicated

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



TURBINE ENGINES

No. of Units
 No. of I.E.
 No. of I.M.
 No. of Units

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

Is single or Double Reduction gear employed?

Revolvs per min. of I.E. Turbine at Full Power

1.5

1.5

1st Reduction Gear

2nd

Turbine Shaft

Total Shaft Horse Power

Date of Harbortrial

Total Trip

Trials run as

Speed on Trial

Turbine Speeds forced by

Wheels forced or cast by

Reduction gear Shafts forced by

Wheels forced or cast by

DESCRIPTION OF INSTALLATION

TURBO-ELECTRIC PROPELLING MACHINERY

No. of Turbo-Generating sets

Capacity of each

Type of Turbine employed

Description of Generators

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

Is single or Double Reduction gear employed?

Revolvs per min. of Motors at Full Power

1.5

No. of Motors driving Propeller Shafts

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

Is single or Double Reduction gear employed?

Description of Motors

Revolvs per min. of Generators at Full Power

Motors

Turbines

Total Shaft Horse Power

Date of Harbortrial

Total 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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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?

Works No.

No. of Boilers

Single or Double-ended

No. of Passages in each

Type of Passages

Time when last 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?

Material of Plates

Stay Bars

Ribs

Funnels

Greatest Internal Diam. of Boilers

Length

Square Feet of Heating Surface

Girth

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BOILERS. (Auxiliary)

Works No. *M.E. 54*

No. of Boilers *2* Type *Cylindrical-multitubular*

Single or Double-ended *Single*

No. of Furnaces in each *3*

Type of Furnaces *Morrison*

Date when Plan approved *10-5-24*

Approved Working Pressure *180 lbs \square*

Hydraulic Test Pressure *320 " "*

Date of Hydraulic Test *27-1-25*

" when Safety Valves set *19-6-25*

Pressure at which Valves were set *185 $\frac{1}{2}$ \square*

Date of Accumulation Test *19-6-25*

Maximum Pressure under Accumulation Test *190 lbs \square*

System of Draught *Natural*

Can Boilers be worked separately? *Yes*

Makers of Plates *Cochrane Glasgow*

" Stay Bars *Steel Coy Scotland*

" Rivets *Renf " Glasgow*

" Furnaces *Marshall & Co "*

Greatest Internal Diam. of Boilers *13'-9 $\frac{13}{16}$ "*

" " Length " *11'-0 "*

Square Feet of Heating Surface each Boiler *1803*

" " Grate " " *—*

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

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

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

" Test Cocks " *Three* " Salinometer Cocks *One*



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

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

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

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

No. of Strakes of Shell Plating in each Boiler *One*

Plates in each Strake *Two*

Thickness of Shell Plates Approved *1 3/32"*

in Boilers *1 3/32"*

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 *27/32"*

inside *31/32"*

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 5/32"* Pitch *8 7/16"*

No. of Rows of Rivets in Centre Circumferential Seams *No Centre Seams*

Are these Seams Hand or Machine Riveted? *Machine*

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 1/4"* Pitch *4.033"*

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

Are these Seams Hand or Machine Riveted? *Machine*

Diam. of Rivet Holes *1 1/4"* Pitch *4.033"*

Size of Manholes in Shell *16 x 12"*

Dimensions of Compensating Rings *34.5" x 32" x 1 3/32"*

Thickness of End Plates in Steam Space Approved

in Boilers

Pitch of Steam Space Straps

Threads per Inch

Approval

in Boilers

Material of

How are Straps Secured?

Diam. and Thickness of Loose Washers on End Plates

Riveted

Doubling Straps

Thickness of Middle Back End Plates Approved

in Boilers

Thickness of Doublings in White Spaces between Fireboxes

in Boilers

Pitch of Straps

Diam. of Straps Approved

Threads per Inch

in Boilers

Material

Are Straps Stiff with Nuts outside?

Thickness of Back End Plates at Bottom Approved

in Boilers

Pitch of Straps at White Spaces between Fireboxes

Thickness of Doublings in

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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 3/32" in plates
22 1/2" x 19"*

*6
3 1/4"*

*Steel
Double nuts & washers.*

*11 1/2" x 1"
None*

"

*27"
3/32"*

*3/32" manhole for emitting
15" x 8 3/4"*

9

*Steel
Yes.*

*27"
3/32"*

*15" x 8 3/4"
None - use manhole
for by machine emitting*

*1 1/32"
None*

Thickness of End Plates 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



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Diarr. of Stays Approved	Threads per Inch	✓
" " in Boilers		✓
Material "		✓
Thickness of Front Tube Plates Approved		
" " " " in Boilers		1 5/8"
Pitch of Stay Tubes at Spaces between Stacks of Tubes		14 5/8" x 9"
Thickness of Doublings in " " "		None fitted
" Stay Tubes at " " "		3/16"
Are Stay Tubes fitted with Nuts at Front End?		No
Thickness of Back Tube Plates Approved		
" " " in Boilers		3/4"
Pitch of Stay Tubes in Back Tube Plates		11 1/4" x 9" same pitch
" Plain "		4 1/2" x 4 1/2"
Thickness of Stay Tubes		3/16" - 1/4" = 5/16"
" Plain "		8 W.G.
External Diarr. of Tubes		3 1/4"
Material "		Iron
Thickness of Furnace Plates Approved		
" " " in Boilers		17/32"
Smallest outside Diarr. of Furnaces		3' - 5 1/16"
Length between Tube Plates		7' - 3 5/8"
Width of Combustion Chambers (Front to Back)		2' - 8 1/2"
Thickness of " " Tops Approved		1/16"
" " " " in Boilers		10 1/4" x 8 3/4"
Pitch of Screwed Stays in C.C. Tops		

Diarr. of Screwed Stays Approved	Threads per Inch	1 1/2"
" " in Boilers		1 1/2"
Material "		1 1/2"
Thickness of Combustion Chamber Stays Approved		
" " " in Boilers		1 1/2"
Pitch of Screwed Stays in C.C. Stays		10 1/2" x 8 1/2"
Diarr. " " Approved	Threads per Inch	1 1/2"
" " in Boilers		1 1/2"
Material "		1 1/2"
Thickness of Combustion Chamber Backs Approved		
" " " in Boilers		1 1/2"
Pitch of Screwed Stays in C.C. Backs		11" x 8 1/2"
Diarr. " " Approved	Threads per Inch	1 1/2"
" " in Boilers		1 1/2"
Material "		1 1/2"
Are all Screwed Stays fitted with Nuts inside C.C.?		Yes
Thickness of Combustion Chamber Bottoms		1"
No. of Girders over each Wing Chamber		2
Depth and Thickness of Girders		12" x 12"
Material of Girders		W.G.
No. of Girders in C.C. Tops		2
Size of Lower Hatches		12" x 12"



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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 O.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 plates)
 Material of Girders Steel

No. of Stays in each 2

No. of Tubes, each Boiler 154

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

No. VERTICAL DONKEY BOILERS.

No. of Boilers
 Type
 Greatest Int. Diar.
 Height of Boiler Crown above Fire Grate
 Are Boiler Crowns Flat or Dish'd?
 Internal Radius of Dish'd Ends
 Thickness of Plates
 Description of Seams in Boiler Crowns
 Diar. of Rivet Holes
 Width of Overlap
 Height of Rivet Crowns above Fire Grate
 Are Rivet Crowns Flat or Dish'd?
 External Radius of Dish'd Crowns
 No. of Crown Stays
 Material
 External Diar. of Rivet at Top
 Thickness of Plates
 No. of Water Tubes
 Ext. Diar.
 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 holes are connected to the boiler?
 Can Superheaters be shut off while Boilers are working?
 Are Superheaters in each Boiler?
 Are Superheaters fitted with Heating Coils?
 Date of Test
 Name of Testers
 Name 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

Let. condition of pipes

Let. to superheater

No. of Pipes _____

Material _____

Internal Diar. _____

Thickness _____

How are flanges secured? _____

Date of Hydraulic Test _____

Test Pressure _____

No. of Pipes _____

Material _____

Internal Diar. _____

Thickness _____

How are flanges secured? _____

Date of Hydraulic Test _____

Test Pressure _____

No. of Pipes _____

Material _____

Internal Diar. _____

Thickness _____

How are flanges secured? _____

Date of Hydraulic Test _____

Test Pressure _____



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NO - MAIN STEAM PIPES.

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

*Not auxiliary Steam pipes
tested to requirements.*



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EVAPORATORS.

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

LIST OF DONKEY PUMPS.

- 1 Weirs $8\frac{1}{2} \times 6 \times 13$ " Boiler 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 $7 \times 5 \times 8$ " Vert Dup Aux Feed
 1 Dawson & Downie $7 \times 9 \times 8$ " Vert Dup Ball set
 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 LIST

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 1st, 2nd & 3rd stages
- 1 Extra set of valves for 3rd stage
- 20 Tubes for cooler

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

REFRIGERATORS.

No. of Machines

Capacity of each

Makers

Description

1 } *J. & C. Hall* } *crew's use*
Vertical } *only*

No. of Steam Cylinders, each Machine

No. of Compressors

No. of Cranks

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

System of Refrigeration

" Insulation

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

Spaces?

Are all Pipes, Air Trunks, &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.

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



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"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 ₂ 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 *236* No. of Motors driving Fans, &c. *6* No. of Heaters

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



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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 bushed 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 ^{us}me from personal examination

M.V. "Atlantic"
John Henderson
 Engineer Surveyor to the British Corporation for the Survey and Registry of Shipping.

Fees—

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

It is submitted that this Report be approved,

John Barr for Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the *18th November 1915*

Fees advised

Fees paid



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 Secretary.

GENERAL CONTRACTORS

1.00	100.00	100.00
2.00	200.00	200.00
3.00	300.00	300.00
4.00	400.00	400.00
5.00	500.00	500.00
6.00	600.00	600.00
7.00	700.00	700.00
8.00	800.00	800.00
9.00	900.00	900.00
10.00	1000.00	1000.00
11.00	1100.00	1100.00
12.00	1200.00	1200.00
13.00	1300.00	1300.00
14.00	1400.00	1400.00
15.00	1500.00	1500.00
16.00	1600.00	1600.00
17.00	1700.00	1700.00
18.00	1800.00	1800.00
19.00	1900.00	1900.00
20.00	2000.00	2000.00
21.00	2100.00	2100.00
22.00	2200.00	2200.00
23.00	2300.00	2300.00
24.00	2400.00	2400.00
25.00	2500.00	2500.00
26.00	2600.00	2600.00
27.00	2700.00	2700.00
28.00	2800.00	2800.00
29.00	2900.00	2900.00
30.00	3000.00	3000.00
31.00	3100.00	3100.00
32.00	3200.00	3200.00
33.00	3300.00	3300.00
34.00	3400.00	3400.00
35.00	3500.00	3500.00
36.00	3600.00	3600.00
37.00	3700.00	3700.00
38.00	3800.00	3800.00
39.00	3900.00	3900.00
40.00	4000.00	4000.00
41.00	4100.00	4100.00
42.00	4200.00	4200.00
43.00	4300.00	4300.00
44.00	4400.00	4400.00
45.00	4500.00	4500.00
46.00	4600.00	4600.00
47.00	4700.00	4700.00
48.00	4800.00	4800.00
49.00	4900.00	4900.00
50.00	5000.00	5000.00

It is submitted that this Report be approved.

Approved by the Committee for the City of M.B.S. on the 1st day of January 1900.

[Signature]

[Signature]

[Signature]



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