

No. 2330

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. 2307 No. in Register Book 3400

" " S.S. SOUTHERN SUN

Makers of Engines

Shields Engineering Co. Ltd.

Works No.

389

Makers of Main Boilers

Richardsons Westgarth & Co.

Works No.

D. 198

Makers of Donkey Boiler

✓

Works No.

✓  
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MACHINERY.



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No.

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

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

Received at Head Office

28<sup>th</sup> December 1929

Surveyor's Report on the New Engines, Boilers, and Auxiliary  
Machinery of the ~~Single Sloop~~ ~~Coast Guard~~ Sloop *Whaler*

*"Southern Can"*

Official No.

Port of Registry

*Quebec*

Registered Owners

*The Southern Whaling & Sealing Co. Ltd.*

Engines Built by *MESSRS THE SHIELDS ENG & DRY DOCK CO. LTD.*

at

*NORTH SHIELDS*

Main Boilers Built by

*Richardson Westgarth & Co. Ltd.*

at

*Northumb.*

Donkey "

"

at

Date of Completion

*8-29*

First Visit

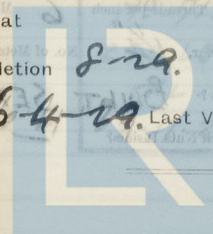
*16-4-29*

Last Visit

*23-8-29*

Total Visits

*35*



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## RECIPROCATING ENGINES.

Works No. 389

No. of Sets 1

Description

INVERTED CYLINDERS

TRIPLE EXPANSION. SURFACE CONDENSING.

No. of Cylinders each Engine

3

No. of Cranks

3

Diars. of Cylinders

14" x 23" x 39 1/8"

Stroke

24"

Cubic feet in each L.P. Cylinder

1658

Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr?

YES

"

"

each Receiver?

YES

Type of H.P. Valves,

LOCKWOOD &amp; CARLISLE PISTON VALVE

1st I.P. "

"D" TYPE SLIDE VALVE.

2nd I.P.,

L.P.

"TRICK" PORT SLIDE VALVE

Valve Gear

"STEPHENSON" TYPE.

Condenser

PEAR SHAPE TWO FLOW

Cooling Surface

925

sq. ft.

Diameter of Piston Rods (plain part)

4"

Screwed part (bottom of thread)

2.787.

Material

INGOT STEEL

Diar. of Connecting Rods (smallest part)

3 5/8"

Material

SCRAP IRON OR  
INGOT STEEL

Crosshead Gudgeons

4"

Length of Bearing

4 1/2"

Material

INGOT STEEL.

No. of Crosshead Bolts (each)

4

Diar. over Thrd.

1 3/4"

Thds. per inch

6

Material

M. STEEL.

Crank Pin

2

"

2 1/4"

"

6

"

DO.

Main Bearings

6

Lengths

9"

Bolts in each

2

Diar. over Thread

2"

Threads per inch

6

Material

DO.

Holding Down Bolts, each Engine

57

Diar.

1 1/4"

No. of Metal Chocks

57

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

W SOMERS LTD.

Piston

" "

DO.

Crossheads,

" "

DO.

Connecting Rods, Finished by

SHIELDS, ENG &amp; DRY DOCK CO LTD.

Piston

" "

DO.

Crossheads,

" "

DO.

Date of Harbour Trial

24-8-29.

Trial Trip

23-8-29.

Trials run at

In North Sea.

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

Y.

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

842

Revs. per min.

146

Pressure in 1st I.P. Receiver,

61

lbs., 2nd I.P.,

lbs., L.P., 10

lbs., Vacuum, 25" ins.

Speed on Trial

no check taken

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

data:—

Builders' estimated I.H.P.

750

Revs. per min.

Estimated Speed

12 knots.

H. P. CYLINDER WATER TEST.

B. C. TEST.

No 715

270 LBS.

T.L.

2.7.29.

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## TURBINE ENGINES.

Works No. Type of Turbines

No. of H.P. Turbines No. of L.P. No. of L.P. No. of Astern

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

Is Single or Double Reduction Gear employed?

Diam. of 1st Reduction Pinion

" 1st " Wheel

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion

" 2nd " Wheel

Estimated Pressure per lineal inch

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

" " L.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 Knots. Propeller Revs. per min. S.H.P.

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

## DESCRIPTION OF INSTALLATION.

No. of Turbo-Generators Sets

Capacity of each

Type of Turbines employed

Description of Generators

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

Diam. of 1st Reduction Pinion

" 1st " Wheel

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion

" 2nd " Wheel

Estimated Pressure per lineal inch

Revs. per min. of Generators at Full Power

" " Motors

" 1st Reduction Shaft

" 2nd " "

Total Shaft Horse Power

Date of Harbour Trial

Trials run at

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

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by



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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

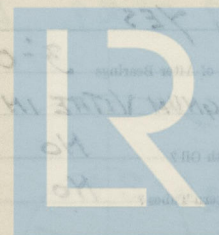
Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

## DESCRIPTION OF INSTALLATION.



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## SHAFTING.

Are the Crank Shafts Built or Solid?

**BUILT.**

No. of Lengths in each

**1**

Angle of Cranks

**120°**

Diam. by Rule

**7.387"**

Actual

**7.5"**

In Way of Webs

**7.5"**

" of Crank Pins

**7.5"**

Length between Webs

**9 3/8"**

Greatest Width of Crank Webs

**14 1/2"**

Thickness

**4 1/16"**

Least

" "

**11 1/4"**

"

**4 1/16"**

Diam. of Keys in Crank Webs

**1 7/8"**

Length

**3 1/2"**

" Dowels in Crank Pins

**1"**

Length

**3 1/2"**

Screwed or Plain

**PLAIN.**

No. of Bolts each Coupling

**4**

Diam. at Mid Length

**2 1/8"**

Diam. of Pitch Circle

**11 3/4"**

Greatest Distance from Edge of Main Bearing to Crank Web

**1/8" ON ALL CRANKS.**

Type of Thrust Blocks

**HORSE SHOE TYPE 6 SHOES.**

No. " Rings

**6**

Diam. of Thrust Shafts at bottom of Collars

**7 1/2"**

No. of Collars

**6**

" " Forward Coupling

**7 1/8"**

At Aft Coupling

**7 1/8"**

Diam. of Intermediate Shafting by Rule

**None.**

Actual

No. of Lengths

No. of Bolts, each Coupling

**✓**

Diam. at Mid Length

**✓**

Diam. of Pitch Circle

**✓**

Diam. of Propeller Shafts by Rule

Actual

**8"**

At Coupling

**7 1/2"**

Are Propeller Shafts fitted with Continuous Brass Liners?

**YES**

Diam. over Liners

**9 1/16"**

Length of After Bearings

**3'-0 1/2"**

Of what Material are the After Bearings composed?

**LIGNUM VITAE IN BRASS BUSH.**

Are Means provided for lubricating the After Bearings with Oil?

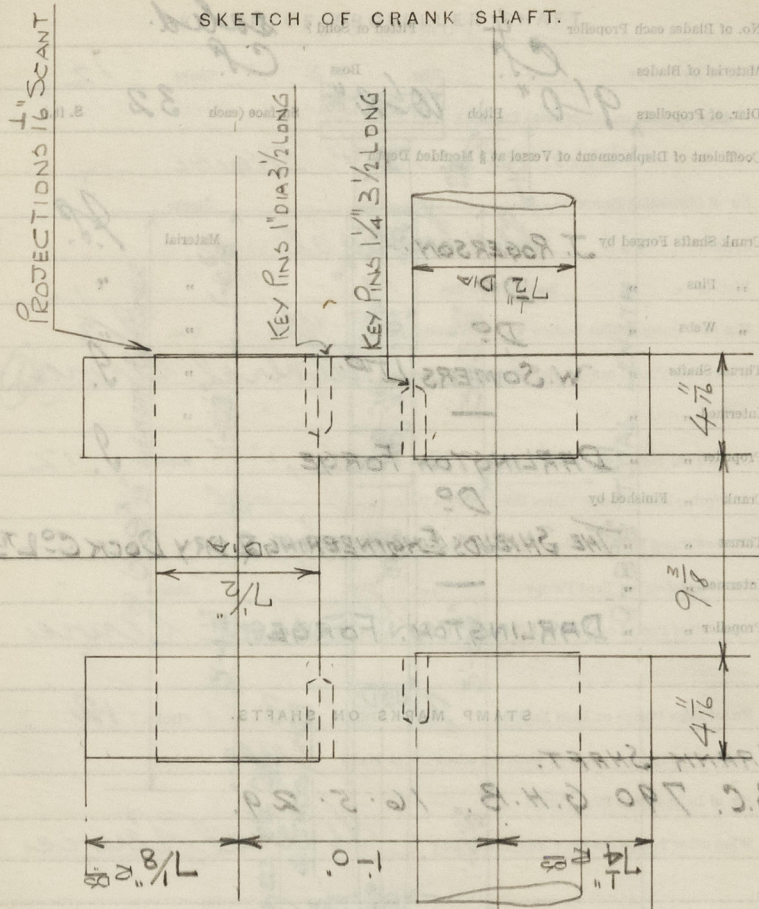
**No**

" " to prevent Sea Water entering the Stern Tubes?

**No**

If so, what Type is adopted?

## SKETCH OF CRANK SHAFT.



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No. of Blades each Propeller

Fitted or Solid?

solid.

Material of Blades

Boss

C.P.

Diam. of Propellers

Pitch

10' 2"

Surface (each)

32

S. ft.)

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

Crank Shafts Forged by J. ROGERSON.

Material

J.P.

Pins

D.O.

Webs

D.O.

Thrust Shafts

W. SOMERS LTD.

Interned.,

Propeller

DARLINGTON FORGE

Crank Finished by

D.O.

Thrust

THE SHIELDS ENGINEERING &amp; DRY DOCK CO. LTD.

Interned.,

Propeller

DARLINGTON FORGE.

STAMP MARKS ON SHAFTS.

CRANK SHAFT.

B.C. 790 G.H.B. 16.5.29.

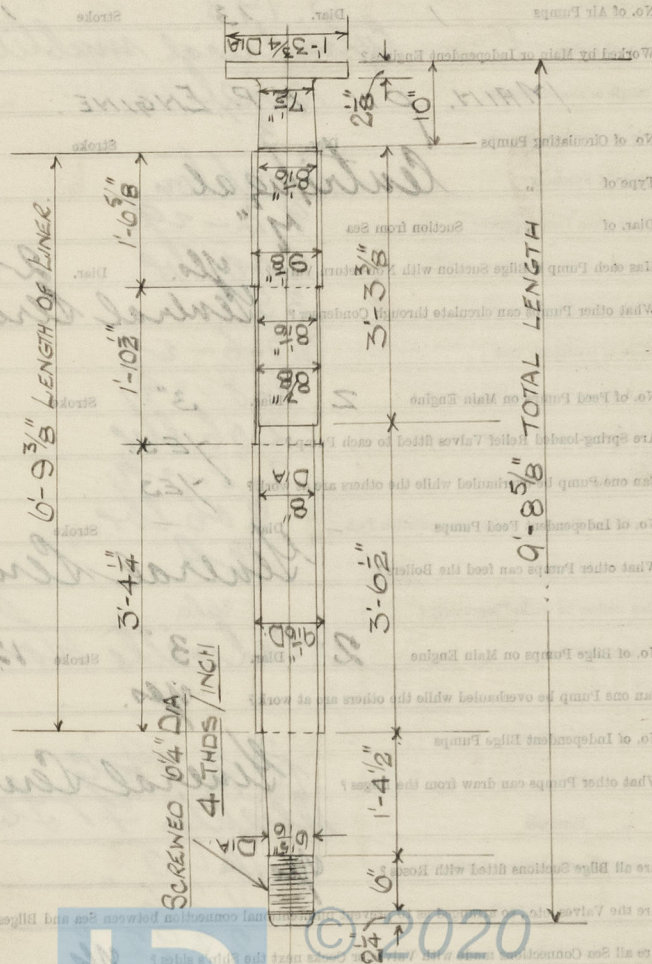
THRUST SHAFT.

B.C. 1374 J.D.S. 29.8.29. B.C. 2.0HM.

TAIL SHAFT.

B.C. 824. G.H.B. 17.6.29. 224.

## SKETCH OF PROPELLER SHAFT.





## PUMPS, ETC.

No. of Air Pumps 1 Diar. 13 Stroke 12

Worked by Main or Independent Engines?

MAIN ON H.P. ENGINE.

No. of Circulating Pumps 1 Diar. Stroke

Type of " Centrifugal

Diar. of " Suction from Sea 7" 2 1/2"

Has each Pump a Bilge Suction with Non-return Valve? yls. Central Service.

What other Pumps can circulate through Condenser?

No. of Feed Pumps on Main Engine 2 Diar. 3" Stroke 12

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 2 Diar. 3" Stroke 12"

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 Furnace

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

Boiler Bars

Rivets

Fastenings

Greatest Internal Diar. of Boilers

Length

Square Feet of Heating Surface

Girth

No. of Safety Valves on each Boiler

Position of Safety Valves

No. of Water Tanks

Test Cocks

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## BOILERS

Works No.

No. of Boilers

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

Are the Safety Valves fitted with Easing Gear?

No. of Pressure Gauges, each Boiler

" Test Cocks

Rule Diam.

Actual

No. of Water Gauges

" Salinometer Cocks

D. 198.

Cylindrical multitubular  
single.

3

Blighton.

9-4-29.

200 lbs.

350 "

27-6-29.

7-8-29.

206 lbs.

7-8-29.

206 lbs.

C.A.

Oatville Long.

R. B. Dig.  
Blighton & Co.

14' 0"

11' 6"

2292 sq

60 sq

2

2 1/2

Yps.

2

3

1

1



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

*direct 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?

*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

Diam. of Rivet Holes Pitch

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diam. of Rivet Holes Pitch

No. of Rows of Rivets in Front End Circumferential Seams

Are these Seams Hand or Machine riveted?

Diam. of Rivet Holes Pitch

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diam. of Rivet Holes Pitch

Size of Manholes in Shell

Dimensions of Compensating Rings

Thickness of End Plates in Steam Space Approved

in Boilers

Pitch of Steam Space Straps

Diam. of Rivet Holes in Boilers

Material of

How are Straps Secured?

Diam. and Thickness of Loose Washers on End Plates

Width of

Thickness of Middle Back End Plates Approved

Thickness of Double Straps in Wide Spaces between

Pitch of Straps at

Diam. of Straps Approved

in Boilers

Material of

Are Straps fitted with Nuts and Washers?

Thickness of Back End Plates at Bottom Approved

in Boilers

Pitch of Straps at

Thickness of Double Straps in Wide Spaces between

Diam. of Straps Approved

in Boilers

Material of

Are Straps fitted with Nuts and Washers?

Thickness of Back End Plates at Bottom Approved

in Boilers

Pitch of Straps at

Thickness of Double Straps in Wide Spaces between

Diam. of Straps Approved

in Boilers

Material of

Are Straps fitted with Nuts and Washers?



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Thickness of End Plates in Steam Space Approved

Are the " " " " " in Boilers

Pitch of Steam Space Stays

Diam. " " " " " Approved Threads per Inch

" " " " " in Boilers

Material of " " " "

How are Stays Secured?

Diam. and Thickness of Loose Washers on End Plates

Are the " " " Riveted " " "

Width " " " Doubling Strips " " "

Are the " " " " " " "

Thickness of Middle Back End Plates Approved

" " " " " in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at " " " "

Diam. of Stays Approved Threads per Inch

" " " " in Boilers

Material " " " "

Are Stays fitted with Nuts outside?

Are these Stays Used at Bottom Approved?

Thickness of Back End Plates at Bottom Approved

" " " " " in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in " " "

No. of Rows of Stays at Top & End of Fireboxes

Thickness of Front End Plates at Bottom Approved

" " " " " in Boilers

No. of Longitudinal Stays in Spaces between Furnaces

Discussions of Designing Stays

Threads per Inch

Disc of Stays Approved

" " " " in Boilers

Material

Thickness of Front Top Plates Approved

" " " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

" " " " in Boilers

Thickness of Doublings in " " " "

Stay Tubes at " " " "

Are Stay Tubes fitted with Nuts at Front End

Thickness of Back Top Plates Approved

" " " " in Boilers

Pitch of Stay Tubes in Back Top Plates

" " " " in Boilers

Thickness of Stay Tubes

" " " " in Boilers

External Diam. of Tubes

Material

Are these Stays Used at Bottom Approved?

Thickness of Furnace Plates Approved

" " " " in Boilers

Smallest outside Diam. of Tubes

Length between Tube Sheets

Thickness of Tubes

Disc of Stays Approved

" " " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

" " " " in Boilers



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Diarr. 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 Diarr. of Tubes

Material "

Thickness of Furnace Plates Approved

" " " in Boilers

Smallest outside Diarr. 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.O. Tops



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Diam. of Screwed Stays Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Sides Approved

" " " " in Boilers

Pitch of Screwed Stays in C.O. Sides

Diam. " " Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.O. Backs

Diam. " " Approved Threads per Inch

" " " in Boilers

Material " "

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

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

" " " Centre "

Depth and Thickness of Girders

Material of Girders

No. of Stays in each

No. of Tubes, each Boiler

Size of Lower Manholes

# VERTICAL DONKEY BOILERS

Type No. of Boilers

Height of Boiler Crown above the Gate

Are Boiler Crowns Fitted or Disposed?

Internal Radius of Dished Boilers

Description of Gears in Boiler Crowns

Height of Boiler Crown above the Gate

Are Boiler Crowns Fitted or Disposed?

Internal Radius of Dished Crowns

No. of Crown Stays

External Diam. of Tubes at Top

No. of Water Tubes

Material of Water Tubes

Size of Manholes in Shell

Description of Compensating Ring

Heating Surface, each Boiler

## SUPERHEATERS

Description of Superheaters

Water Heated?

Can Superheaters be shut off while boiler is working?

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## 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	

## 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

## 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. 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

1  
copper.  
S. D."  
4 1/2  
4 W.G.  
brained  
15-8-19  
400 lbs

## LIST OF ROTARY EVAPORATORS

Type

No.

Material

Working Pressure

Test Pressure

Date of Test

Date of Test of Safety Valves under Steam

## FEED WATER HEATERS

Type

No.

Working Pressure

Test Pressure

Date of Test

## FEED WATER FILTERS

Type

No.

Working Pressure

Test Pressure

Date of Test



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## LIST OF SPARE GEAR.

No. of Top End Bolts.	2	No. of Bot. End Bolts.	2	No. of Cylinder Cover Studs	
" Coupling Bolts	4	" Main Bearing Bolts	2	" Valve Chest "	
" Junk Ring Bolts	6	" Feed Pump Valves	2	" Bilge Pump Valves	1 SET.
" H.P. Piston Rings		" L.P. Piston Rings		" L.P. Piston Rings	
" " Springs		" " Springs		" " Springs	
" Safety Valve "		" Fire Bars		" Feed Check Valves	
" Piston Rods		" Connecting Rods		" Valve Spindles	
" Air Pump Rods		" Air Pump Buckets		" Air Pump Valves	1 SET
" Cir. "		" Cir. "		" Cir. "	
" Crank Shafts		" Crank Pin Bushes		" Crosshead Bushes	
" Propeller Shafts		" Propellers		" Propeller Blades	
" Boiler Tubes		" Condenser Tubes	12	" Condenser Ferrules	30

OTHER ARTICLES OF SPARE GEAR:—

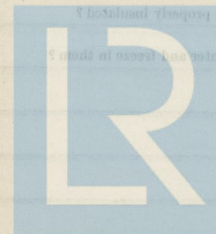
1 PISTON ROD GLAND.

1 SLIDE " "

1 SET OF METALLIC PACKING & SEGMENTS FOR  
PISTON & SLIDE RODS

## REFRIGERATORS.

No. of Machine		Capacity of each	
Description			
No. of Steam Cylinders, each Machine		No. of Compressors	
No. of Cylinders			
Test-mins of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machine			
or Independently			



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## REFRIGERATORS.

No. of Machines	Capacity of each	No. of Cylinders, each Machine
Makers		
Description		
H.P. Piston Rings	L.P. Piston Rings	L.B. Piston Rings
Springs	Springs	Springs
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		
Air Pump Pistons	Air Pump Valves	
Crank Shafts	Crank Pin Bolts	Crankshaft Bolts
Dropper Shafts	Droppers	Trougher Shafts
Bottle Taps	Refrigerant Tanks	Refrigerant Pipes

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.

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

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## ELECTRIC LIGHTING.

Installation Fitted by

No. and Description of Dynamos

## Makers of Dynamos

Capacity " 40 Amperes, at 110 Volts, 350 Revols. per Min.

Current Alternating or Continuous

### Single or Double Wire System

### Position of Dynamos

“ 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.
<p><i>same as before</i></p> <p><i>same as before</i></p> <p><b>© 2020</b></p> <p><b>Lloyd's Register Foundation</b></p>							

Total No. of Lights

No. of Motors driving Fans, &amp;c.

(4) No. of Heaters

### Current required for Motors and Heaters



Positions of Auxiliary Switch Boards, with No. of Switches on each

Are Out-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits

On Aux. " " each Auxiliary Circuit

Wherever a Cable is reduced in size

To each Lamp Circuit

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

Are the Fuses of Standard Sizes?

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

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

Smallest Single Wire used, No.

S.W.G., Largest, No.

S.W.G.

How are Conductors in Engine and Boiler Spaces protected?

" " Saloons, State Rooms, &c., " ?

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp

(2) " " passing through Bunkers or Cargo Spaces

(3) " " Deck Beams or Bulkheads

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

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?

Have Tests been made to prove that this condition has been satisfactorily fulfilled?

Has the Insulation Resistance of the whole system been tested?

What does the Resistance amount to?

Ohms,

Is the Installation supplied with a Voltmeter?

" " " an Ampere Meter

Date of Trial of complete Installation

23-8-19

Duration of Trial

6 hrs.

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

Yes.



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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.*

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

Is the

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

**SOUTHERN SUN**

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

*J. D. Stephenson*  
*John Lawrence*

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

## Fees—

## MAIN BOILERS.

	£	s.	d.
H.S. <i>2292</i> Sq. ft.	:	:	:
G.S. <i>60</i> "	:	:	:

## DONKEY BOILERS.

	£	s.	d.
H.S. Sq. ft.	:	:	:
G.S. "	:	:	:

## ENGINES.

	£	s.	d.
L.P.C. <i>16.6</i> Cub. ft.	:	:	:

Testing, &c. ...	:	:	:
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Expenses ...	:	:	:
Total ...	£	:	:

It is submitted that this Report be approved,

*Gas Barr* for Chief Surveyor.

Approved by the Committee for the Class of M.B.S.\* on the *8<sup>th</sup> January 1930.*

Fees advised

Fees paid



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Secretary.



## GENERAL CONSTRUCTION

—200—

Have the Machinery and Boiler been constructed in accordance with the requirements of the Bureau of Steam Boilers and Machinery?

Approved Plans? *Yes* : : *Yes* U.S. *Yes*

Is the Machinery and Boiler in good condition? *Yes* : : *Yes* U.S. *Yes*

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