

No. 2339

1929

SE

THE BRITISH CORPORATION FOR THE SURVEY  
AND

REGISTRY OF SHIPPING.

BALLENNA

Report No. 2316 No. in Register Book 3709

" Vestfold " NIMBUS

S.S. CHR. CASTBERG

Makers of Engines Smiths Dock Co. Ltd.

Works No. 373

Makers of Main Boilers Hawthorn Leslie & Co. Ltd.

Works No. 9320

Makers of Donkey Boiler ✓

Works No. ✓

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 .....

Surveyor's Report on the New Engines, Boilers, and Auxiliary  
Machinery of the ~~Single Trip~~ ~~Twin Quadruple~~ Screw Whaler.

Chr. Castberg

Official No. ....

Port of Registry .....

Registered Owners .....

Engines Built by .....

at .....

Main Boilers Built by .....

at .....

Donkey .....

at .....

Date of Completion .....

First Visit .....

Last Visit .....

Total Visits .....

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## TURBINE ENGINES.

Works No. Type of Turbines

No. of H.P. Turbines No. of I.P. No. of L.P. No. of Stern

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 Width Pitch of Teeth

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion

2nd Wheel Width Pitch of Teeth

Estimated Pressure per lineal inch

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

" " 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 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

## TURBO-ELECTRIC INSTALLATION.

No. of Turbo-Generator 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

## DESCRIPTION OF INSTALLATION.

Diam. of 1st Reduction Pinion

1st Wheel Width Pitch of Teeth

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion

2nd Wheel Width Pitch of Teeth

Estimated Pressure per lineal inch

Revs. per min. of Generators at Full Power

" " Motors

" " 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.



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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

Revol. 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 Revol. 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.

Sketch of Crank Shaft

Are the Crank Shafts Built or Sold?

No. of Journals in each

Dist. by Rule

" of Crank Pins

Quantity Width of Crank Webs

" "

Dist. of Keys in Crank Webs

" Depth in Crank Pins

No. of Bolts each Coupling

Distance from Base of Crank to

Type of Turbine

" "

Diam. of Turbine Shafts at bottom of Collars

" Forward Coupling

" At 1st Coupling

No. of Journals

Actual

Diam. at 1st Coupling

Diam. of Turbine Shafts at 1st Coupling

Actual

Diam. of Propeller Shafts by Rule

Are Propeller Shafts fitted with Coupling Bolts?

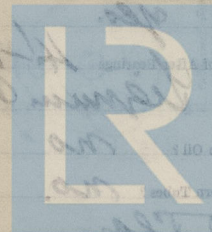
Diam. over Lines

Of what Material are the After Bearings composed?

Are the Bearings fitted for Lubrication with Oil?

Do they have Water entering the Seal to them?

Is the Water entering the Seal to them?



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## SHAFTING.

Are the Crank Shafts Built or Solid?

*built.*

No. of Lengths in each

*one*

Angle of Cranks

*120°*

Diam. by Rule

Actual

*8 5/8"*

In Way of Webs

*9"*

" of Crank Pins

*8 3/4"*

Length between Webs

*12"*

Greatest Width of Crank Webs

*2'-0"*

Thickness

*5-5/16"*

Least " "

*1'-1 1/8"**5-5/16"*

Diam. of Keys in Crank Webs

*1 1/2"*

Length

*4"*

" Dowels in Crank Pins

*1"*

Length

*3 1/2"*

Screwed or Plain

*plain*

No. of Bolts each Coupling

*6*

Diam. at Mid Length

*2 1/8"*

Diam. of Pitch Circle

*12 3/4"*

Greatest Distance from Edge of Main Bearing to Crank Web

*3/16"*

Type of Thrust Blocks

*Michel.*

No. " Rings

*one, and 1 on stern.*

Diam. of Thrust Shafts at bottom of Collars

*8 5/8"*

No. of Collars

*1*

" " "

Forward Coupling

*8 5/8"*

At Aft Coupling

*8 5/8"*

Diam. of Intermediate Shafting by Rule

Actual

*8 5/8"*

No. of Lengths

*1*

No. of Bolts, each Coupling

*6*

Diam. at Mid Length

*2 1/8"*

Diam. of Pitch Circle

*12 3/4"*

Diam. of Propeller Shafts by Rule

Actual

*9"*

At Coupling

*8 5/8"*

Are Propeller Shafts fitted with Continuous Brass Liners?

*yes.*

Diam. over Liners

*10 3/16"*

Length of After Bearings

*4'-1"*

Of what Material are the After Bearings composed?

*ignum vitæ.*

Are Means provided for lubricating the After Bearings with Oil?

*no*

" " to prevent Sea Water entering the Stern Tubes?

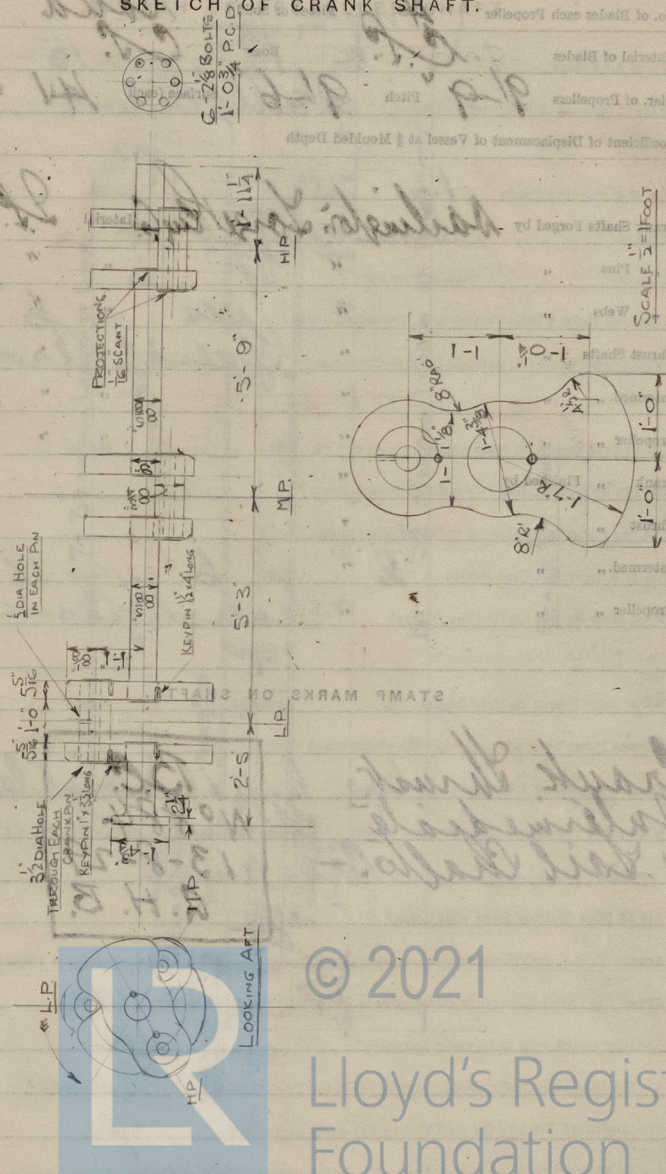
*no.*

If so, what Type is adopted?

*open to clear*

AT FORE END

## SKETCH OF CRANK SHAFT.



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No. of Blades each Propeller

Pitted or Solid?

Material of Blades

Boss

Diam. of Propellers

Pitch

Surface (each

S. ft.)

Coefficient of Displacement of Vessel at  $\frac{3}{4}$  Moulded Depth

Crank Shafts Forged by

Material

Pins

Webs

Thrust Shafts

Intermed.,

Propeller

Crank " Finished by

Thrust "

Intermed.,

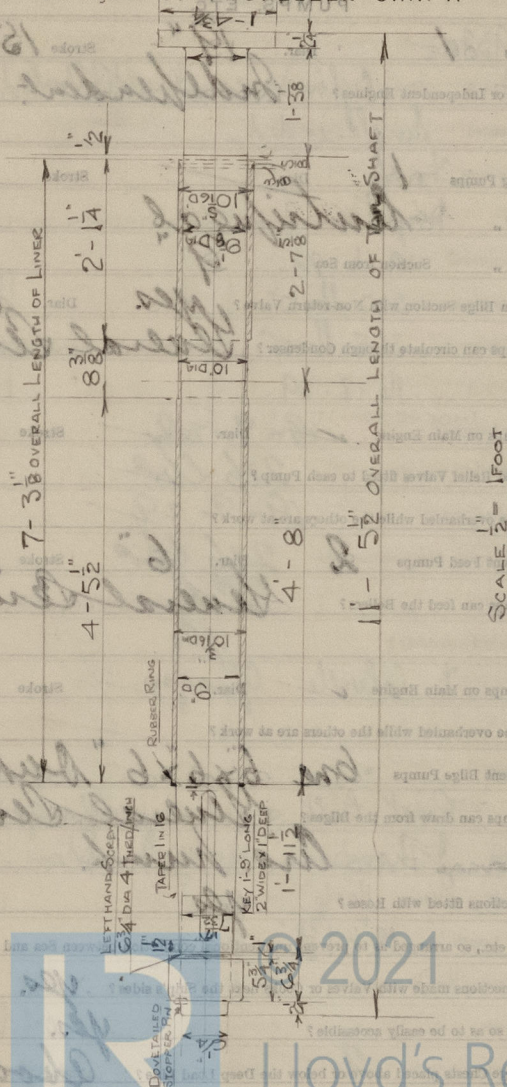
Propeller "

STAMP MARKS ON SHAFTS.

Crank. Thrust.  
Intermediate.  
Sail Shaft:-

BC  
No 884  
13-8-29  
G. H. B.

## SKETCH OF PROPELLER SHAFT.



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## PUMPS, ETC.

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

No. of Boilers

Type of Boilers

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 Drafting

Can Boilers be worked separately?

Makers of Plates

" "

" "

" "

" "

" "

" "

" "

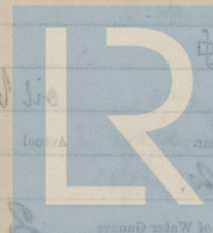
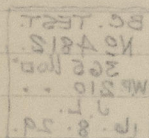
" "

" "

" "

" "

" "



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## BOILERS

Works No. 9320.

No. of Boilers One. Type Cylindrical Multitubular.

Single or Double-ended Single-ended.

No. of Furnaces in each Four.

Type of Furnaces Dighton.

Date when Plan approved 19.6.29.

Approved Working Pressure 210 lbs. sq. in.

Hydraulic Test Pressure 365 lbs. sq. in.

Date of Hydraulic Test 16.8.29.

" when Safety Valves set 19.9.29.

Pressure at which Valves were set 216 lbs. sq. in.

Date of Accumulation Test 19.9.29.

Maximum Pressure under Accumulation Test 216 lbs. sq. in.

System of Draught C.A.

Can Boilers be worked separately? Yes.

Makers of Plates D. Colville Glasgow.

" Stay Bars "

" Rivets Riel Bolt & Nut Coy. Glasgow.

" Furnaces J. Thompson Walsinghampton.

Greatest Internal Diam. of Boilers 16'-6"

" " Length " 12'-4<sup>25</sup>/<sub>32</sub>"

Square Feet of Heating Surface each Boiler 3624 sq. ft.

" " Grate " "

No. of Safety Valves each Boiler 2 Rule Diam. Actual 2<sup>3</sup>/<sub>4</sub>"

Are the Safety Valves fitted with Easing Gear? Yes.

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

" Test Cocks " " Salinometer Cocks 1

BC. TEST.  
No. 4812.  
365 lbs. sq. in.  
WP. 210  
J. L.  
16.8.29.

Are the Water Gauges fitted direct to the Boiler Shell or mounted on Piping?

Are the Water Gauge Piping fitted direct to the Boiler Shell or connected by Pipes?

Are these Pipes connected to Boilers by Cocks or Valves?

Are flow or Cocks or Valves fitted on Boiler Shells?

No. of Stakes of Shell Lining in each Boiler

Plates in each Stake

Thickness of Steel Plates Approved

" in Boilers

Are the Rivets Iron or Steel?

Are the Longitudinal Seams Joint or Lap Joints?

Are the Butt Strap Single or Double?

Are the Double Butt Straps of equal width?

Thickness of outside Butt Straps

" "

Are Longitudinal Seams Hand or Machine Riveted?

Are Butt Strap Double or Triple Riveted?

No. of Rivets in a Pitch

Diam. of Rivet Holes

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diam. of Rivet Holes

No. of Rows of Rivets in Front and Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diam. of Rivet Holes

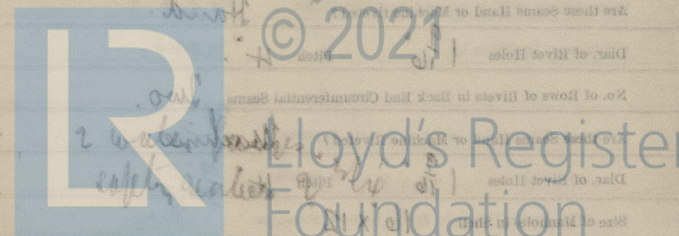
No. of Rows of Rivets in Back and Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diam. of Rivet Holes

Size of Rivets in diam.

Dimensions of Circumferential Joints





7

values.

Machine -  
Treble.

no centre seam.

Two.  
Hand.

ams Two  
achine.

$$2' - 10^n \times 2' - 4^n$$

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Thickness of End Plates in Steam Space Approved  $1\frac{3}{16}$  *direct on boiler*

" " " " " in Boilers  $1\frac{3}{16}$  full *direct*

Pitch of Steam Space Stays  $19" \times 16"$

Diam. " " " " Approved  $3"$  Threads per Inch  $6$

" " " " " in Boilers  $3"$  "  $6$

Material of " " " *Steel*

How are Stays Secured? *Two nuts & washers each end.*

Diam. and Thickness of Loose Washers on End Plates  $\frac{1}{4}$  thick

" " " " Riveted " "  $\checkmark$

Width " " " Doubling Strips "  $\checkmark$

Are the End Stays Single or Double?

Thickness of Middle Back End Plates Approved  $\frac{7}{8}$

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

Thickness of Doublings in Wide Spaces between Fireboxes *none*

Pitch of Stays at " " " "  $14\frac{1}{8} \times 8"$

Diam. of Stays Approved  $1\frac{3}{4}$  Threads per Inch  $9$

" " " " in Boilers  $1\frac{3}{4}$  "  $9$

Material " *Steel*

Are Stays fitted with Nuts outside? *Yes.*

Are these Nuts Head or Hexagon Rivets?

Thickness of Back End Plates at Bottom Approved  $\frac{7}{8}$

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

Pitch of Stays at Wide Spaces between Fireboxes  $14\frac{1}{8} \times 8"$

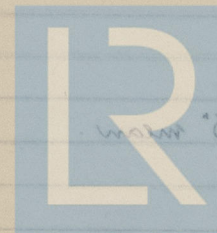
Thickness of Doublings in " " *none.*

Are the Ends of Stays in Back End Plates Single or Double?

Thickness of Front End Plates at Bottom Approved  $\frac{29}{32}$

" " " " " in Boilers  $\frac{29}{32}$

No. of Longitudinal Stays in Spaces between Furnaces *three*



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Diar. of Stays Approved

 $2\frac{3}{4}$ "

Threads per Inch

6.

" " in Boilers

 $2\frac{3}{4}$ "

Material "

Steel.

Thickness of Front Tube Plates Approved

 $2\frac{3}{4}$ "  
 $3\frac{1}{2}$ "  
 $2\frac{3}{4}$ "  
 $3\frac{1}{2}$ "

" " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

 $13\frac{1}{2}$ " x  $7\frac{1}{2}$ "

Thickness of Doublings in

none.

" Stay Tubes at

 $3\frac{1}{8}$ "

Are Stay Tubes fitted with Nuts at Front End

Yes.

Thickness of Back Tube Plates Approved

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

" " " in Boilers

Pitch of Stay Tubes in Back Tube Plates

 $7\frac{1}{2}$ " x  $7\frac{1}{2}$ "  
 $7\frac{1}{2}$ " x  $7\frac{1}{2}$ "

" Plain "

Thickness of Stay Tubes

14 @  $\frac{7}{16}$ ", 82 @  $\frac{3}{8}$ " + 62 @  $\frac{5}{16}$ ".

" Plain "

8 W.G.

External Diar. of Tubes

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

Material "

Iron.

Thickness of Furnace Plates Approved

 $5\frac{1}{8}$ "

" " " in Boilers

 $5\frac{1}{8}$ "

Smallest outside Diar. of Furnaces

 $3'-5\frac{1}{4}"$ 

Length between Tube Plates

 $8'-5\frac{19}{32}"$ 

Width of Combustion Chambers (Front to Back)

 $3'-3"$  mean.

Thickness of " " Tops Approved

 $2\frac{3}{4}$ "  
 $3\frac{1}{2}$ "  
 $2\frac{3}{4}$ "  
 $3\frac{1}{2}$ "

" " " in Boilers

Pitch of Screwed Stays in C.O. Tops

 $8\frac{3}{4}"$  x  $9\frac{3}{4}"$ 

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Diar. of Screwed Stays Approved

Threads per Inch

9.

in Boilers

Material

Steel

Thickness of Combustion Chamber Sides Approved

in Boilers

Pitch of Screwed Stays in C.O. Sides

9" x 8 3/4"

Diar. " " Approved

3 1/4" x 9

Threads per Inch

in Boilers

Material

Steel

Thickness of Combustion Chamber Backs Approved

in Boilers

Pitch of Screwed Stays in C.O. Backs

7 1/2" x 8"

Diar. " " Approved

3 1/4"

Threads per Inch

in Boilers

Material

Steel

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

Yes.

Thickness of Combustion Chamber Bottoms

7/8"

No. of Girders over each Wing Chamber

Three

" " " Centre

Two

Depth and Thickness of Girders

10' x 13/16"

Material of Girders

Steel plate.

No. of Stays in each

Three

No. of Tubes, each Boiler

502

Size of Lower Manholes

16" x 12"

## VERTICAL DONKEY BOILERS

No. of Boilers

Type

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 Crown

Width of Overlap

Dist. at Rivet Heads

Height of Rivet Crown above Fire Grate

Are Rivet Crowns Flat or Dished?

Internal Radius of Dished Crowns

Material

No. of Crown Stays

Thickness of Plates

Bottom

External Dist. at Rivet at Top

Thickness

Dist. Top

No. of Water Tubes

Material of Water Tubes

Size of Manhole in Shell

Dimensions of Compensation Ring

Riveting Machine used

Height between each Boiler

## SUPERHEATERS

Description of Superheaters

Where situated?

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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	
Internal Radius of Dished Ends	
Internal Diar.	
Thickness	
How are Flanges secured?	
Date of Hydraulic Test	
Test Pressure	
No. of Pipes	
Material	
Internal Radius of Dished Ends	
Internal Diar.	
Thickness	
How are Flanges secured?	
Date of Hydraulic Test	
Test Pressure	
No. of Pipes	
Material	
Internal Radius of Dished Ends	
Internal Diar.	
Thickness	
How are Flanges secured?	
Date of Hydraulic Test	
Test Pressure	



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Test Pressure

Test Pressure

420 lbs

No.	Machine	Working Pressure	Test Pressure	Date of Test	Remarks
1	Horizontal Steam Engine	200 lbs	250 lbs	1904	Tested at 200 lbs. Working Pressure. 250 lbs. Test Pressure. 1904.
2	Horizontal Steam Engine	200 lbs	250 lbs	1904	Tested at 200 lbs. Working Pressure. 250 lbs. Test Pressure. 1904.
3	Horizontal Steam Engine	200 lbs	250 lbs	1904	Tested at 200 lbs. Working Pressure. 250 lbs. Test Pressure. 1904.
4	Horizontal Steam Engine	200 lbs	250 lbs	1904	Tested at 200 lbs. Working Pressure. 250 lbs. Test Pressure. 1904.
5	Horizontal Steam Engine	200 lbs	250 lbs	1904	Tested at 200 lbs. Working Pressure. 250 lbs. Test Pressure. 1904.
6	Horizontal Steam Engine	200 lbs	250 lbs	1904	Tested at 200 lbs. Working Pressure. 250 lbs. Test Pressure. 1904.
7	Horizontal Steam Engine	200 lbs	250 lbs	1904	Tested at 200 lbs. Working Pressure. 250 lbs. Test Pressure. 1904.
8	Horizontal Steam Engine	200 lbs	250 lbs	1904	Tested at 200 lbs. Working Pressure. 250 lbs. Test Pressure. 1904.
9	Horizontal Steam Engine	200 lbs	250 lbs	1904	Tested at 200 lbs. Working Pressure. 250 lbs. Test Pressure. 1904.
10	Horizontal Steam Engine	200 lbs	250 lbs	1904	Tested at 200 lbs. Working Pressure. 250 lbs. Test Pressure. 1904.

No. \_\_\_\_\_  
 Date \_\_\_\_\_  
 Feed Water Filters  
 Size \_\_\_\_\_

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## EVAPORATORS.

No. 1 Type *Wells* 10 Tons per Day 10  
 Makers *W. J. Wells*  
 Working Pressure *15 lbs.* Test Pressure *50 lbs.* Date of Test  
 Date of Test of Safety Valves under Steam *19-9-29.*

## FEED WATER HEATERS.

No. 1 Type *Exchange Steam Surface Heater.*  
 Makers *Caird & Raynor.*  
 Working Pressure *20 lbs.* Test Pressure Date of Test

## FEED WATER FILTERS.

No. *One* Type *Gravitation type.* Size  
 Makers *Smiths & Co.*  
 Working Pressure Test Pressure Date of Test

## LIST OF DONKEY PUMPS.

*Bilge pump. Lamonts 6" x 6" x 6"*  
*General Service, Lamonts 6" x 4 1/4" x 6"*  
*Feed pumps, 2 Wells, 6" x 8 1/2" x 18"*  
*Air pump. Wells. 19" x 13" x 15"*  
*Fire pump. H. Watson 9" Centrifugal*  
*oil fuel pumps Wells 3" x 4 1/2" x 6"*  
*oil fuel pump. pump. Nichols 6" x 4" x 6"*



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## SPARE GEAR

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

## OTHER ARTICLES OF SPARE GEAR:-

1 MAIN BEARING	30 TAPE PACKINGS (CONDENSED)	6 KLINGER GAUGE GLASSES
50 ASSORTED NUTS & BOLTS	2 BOILER STAY TUBES	1 DOZ INDIA RINGS FOR DO
1 MAIN CHECK VALVE LID	6 MANHOLE DOOR JOINTS	2 SETS EBONITE RINGS/WIRES PUMPS
1 DONKEY " "	12 DIAPHRAGMS FOR EACH REDUCING VALVE	6 COMBUSTION CHAMBER STAYS & NUTS
1 SET OF AIR DISTRIBUTING VALVES FOR HOWDEN'S FURNACE FRONT	1 SET NICA PLATES FOR FURNACE FRONT	1 SET SUCTION & DELIVERY VALVES FOR GENERAL SERVICE PUMP
2 SHEETS OF BRASS	2 SHEETS OF COPPER	2 SHEETS OF LEAD
1 CWT STEEL BAR & PLATES	1 SPARE ORDINARY GLAND FOR PISTON ROD	1 SPARE ORDINARY GLAND FOR VALVE ROD
3 FULL SETS OF SPARE COILS & TOWELLING FOR HOCKING'S FILTER	1 SET METALLIC PACKING SEGMENTS, SPRINGS ETC FOR PISTON ROD & SLIDE ROD	
1 SET OF PADS FOR MITCHELL BLOCK		

## SPARE GEAR FOR FAN ENGINE

1 SET MAIN BEARINGS WITH BOLTS & NUTS	1 SET CON. ROD TOP & BOTTOM END BUSHES WITH BOLTS & NUTS
1 ECCENTRIC SHEAVE & STRAP COMPLETE	1 PISTON ROD
1 SLIDE ROD	2 SETS PISTON RINGS
1 PISTON	

## REFRIGERATOR MAIN ENGINE SPARES

1 ECCENTRIC STRAP & SHEAVE COMPLETE	1 VALVE SPINDLE
1 COMPLETE SET OF PISTON VALVE RINGS	

## AIR PUMP SPARES

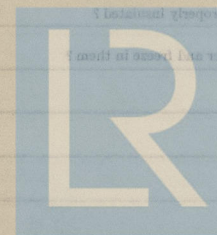
1 STEAM SLIDE VALVE CHEST COMPLETE WITH VALVES, AUX VALVE SPINDLE, DOUBLE JOINT BOTTOM SPINDLE & BALL CROSS HEAD	1 SET PISTON RINGS
	1 PISTON ROD

## SPARES FOR MAIN FEED PUMPS

1 STEAM SLIDE VALVE CHEST COMPLETE	
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## SPARES FOR CENTRIFUGAL CIRCULATING PUMP

1 SET MAIN BEARINGS WITH BOLTS & NUTS	1 SET TOP & BOT END BEARINGS WITH BOLTS & NUTS
1 ECCENTRIC STRAP & SHEAVE	1 PISTON ROD, PISTON & RINGS
1 SLIDE ROD & VALVE	1 IMPELLER & ROD



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## REFRIGERATORS.

No. of Machines

Capacity of each

Makers

Description

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.

No. and	COMPARTMENT.	Temp. at beginning of Trial.	Temp. at end of Trial.	Time required to obtain this Result.	Rise of Temp. after hours.
	Refrigeration	16	318 3-18	10	12 5-35
	Midship	19	480 4-8		
	Accommodation				
	Engine Room	19			

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



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REFRIGERATORS  
MAINT TO STURGE

## ELECTRIC LIGHTING.

Installation Fitted by *R. Pickersgill, Lond.*  
 No. and Description of Dynamos *1 compound wound*  
 Makers of Dynamos *Quadrant Large Eng Co. Ltd.*  
 Capacity *55* Amperes, at *110* Volts, *350* Revols. per Min.  
 Current Alternating or Continuous *Continuous*  
 Single or Double Wire System *Double*  
 Position of Dynamos *Starting Platform*  
 " Main Switch Board " " "  
 No. of Circuits to which Switches are provided on Main Switch Board *4*

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>Irrigation</i>	<i>16</i>	<i>318</i>	<i>3.18</i>	<i>1/22</i>	<i>110</i>	<i>12</i>	<i>5.387</i>
<i>Midship Accommodation</i>	<i>19</i>	<i>480</i>	<i>4.8</i>				
<i>Engine Room</i>	<i>19</i>						
<i>Deck Light.</i>	<i>1</i>	<i>12</i>	<i>2</i>	<i>1/16</i>		<i>25</i>	<i>1.106</i>

Total No. of Lights

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

No. of Heaters

Current required for Motors and Heaters

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

Engine Room 5 Switches  
 Forward 4  
 After Accommodation 4  
 Navigation 6  
 Saloon 3

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. 1/0.44 S.W.G., Largest, No. 7/0.29 S.W.G.

How are Conductors in Engine and Boiler Spaces protected?

" " Saloons, State Rooms, &amp;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? *yes.*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? *yes.*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? *4.5 MEG.* Ohms.Is the Installation supplied with a Voltmeter? *yes.*" " " an Ampere Meter *yes.*Date of Trial of complete Installation *20-9-29* Duration of Trial *6 hrs.*Have all the requirements of Section 42 been satisfactorily carried out? *yes.*

It is submitted that this Report be approved.

It is the material used in the construction of Engines and Boilers, so far as could be seen, sound and

The Workshop thoroughly inspected and approved.

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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.

## Fees—

## MAIN BOILERS.

	£	s.	d.
H.S. 3624 Sq. ft.	:	:	:
G.S. " "	:	:	:

## DONKEY BOILERS.

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

## ENGINES.

L.P.C. 23.4 Cub. ft.	:	:	:
Testing, &c. ...	:	:	:
Expenses ...	:	:	:
Total ... £	:	:	:

It is submitted that this Report be approved,

*J. H. K.*  
Chief Surveyor.

Approved by the Committee for the Class of M.B.S.\* on the 2nd April 1930.



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Secretary.

Fees advised

Fees paid

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.

**CHR. CASTBERG**

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

*J. H. K.*  
*John H. K.*  
Surveyor to the British Corporation for the  
Survey and Registry of Shipping.



## GENERAL CONSTRUCTION

Foot—

and has been approved by the Committee for the Class of M.B.S. on the 3rd of April 1950.

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