

No. 1882

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No.

1642

No. in Register Book

2901

S.S.

"BEN READ"

NN

"TW 1"

Makers of Engines

WM BEARDMORE & CO LTD

Works No. 589

Makers of Main Boilers

WM BEARDMORE & CO LTD

Works No. 122

Makers of Donkey Boiler

Works No.

MACHINERY



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No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. *1642* No. in Register Book *2901*

Received at Head Office *4<sup>th</sup> May 1923*

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

Machinery of the *Single Triple* Screw steamer

"BEN READ"

Official No. *144764* Port of Registry *Bristol*

Registered Owners *National Benyole Co. Ltd*

*Wellington House, Buckingham House, London S.W.1*

Engines Built by *WM. BEARDMORE & CO LTD*

at *COATBRIDGE SCOTLAND*

Main Boilers Built by *WM BEARDMORE & CO LTD*

at *PARKHEAD GLASGOW*

Donkey "✓"

at ✓

Date of Completion *April 1923*

First Visit *20-11-22* Last Visit *20-4-23* Total Visits *24*

*30 miles to Coatbridge, Parkhead*

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## RECIPROCATING ENGINES.

Works No. 582 No. of Sets ONE Description TRIPLE EXPANSION,  
SURFACE CONDENSING, INVERTED, DIRECT ACTING.

No. of Cylinders each Engine THREE No. of Cranks THREE  
Diams. of Cylinders 14" 23" 38" Stroke 27"

Cubic feet in each L.P. Cylinder 17.72

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

" " " each Receiver? YES.

Type of H.P. Valves, PISTON (L.B.C. SPRING RINGS)

" 1st I.P. " SINGLE PORTED D TYPE

" 2nd I.P. " -

" L.P. " SINGLE PORTED D TYPE

" Valve Gear STEPHENSON'S LINK

" Condenser BUILT STEEL PLATES Cooling Surface 750 sq. ft.

Diameter of Piston Rods (plain part) 3 3/4" Screwed part (bottom of thread) 2.78"

Material " MILD STEEL.

Diam. of Connecting Rods (smallest part) 3 1/2" Material MILD STEEL

" Crosshead Gudgeons 3 3/4" Length of Bearing 2 @ 3 3/4" Material " "

No. of Crosshead Bolts (each) 4 Diam. over Thrd. 1 5/8" Thrds. per inch 5 Material MILD STEEL

" Crank Pin " 2 " 2 1/8" " 4 "

" Main Bearings 6 Lengths 2 @ 8 1/2" 4 @ 7"

" Bolts in each 2 Diam. over Thread 1 3/4" Threads per inch 5 Material MILD STEEL.

" Holding Down Bolts, each Engine 30 Diam. 1" No. of Metal Chocks

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 WM BEARDMORE & CO LTD. PARKHEAD.

Piston " " " " " " " " " " " "

Crossheads, " " " " " " " " " " " "

Connecting Rods, Finished by " " " " " " " " " " " "

Piston " " " " " " " " " " " "

Crossheads, " " " " " " " " " " " "

Date of Harbour Trial 19-4-23

" Trial Trip 20-4-23

Trials run at Bristol Channel, between Cleveland Buoy & E & W. grounds lightship

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

If so, what was the I.H.P.? ? Revols. per min. ?

Pressure in 1st I.P. Receiver, 56 lbs., 2nd I.P., 5 lbs., L.P., 6.5 lbs., Vacuum, 24.5 ins.

Speed on Trial 10.2 knots per hour

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

data:— ✓

Builders' estimated I.H.P. 600 Est. Revols. per min. 110.

Estimated Speed ✓



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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 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 \_\_\_\_\_ 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 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 \_\_\_\_\_

## DESCRIPTION OF INSTALLATION.

No. of Turbo-Generators \_\_\_\_\_ 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 \_\_\_\_\_ 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 \_\_\_\_\_

" " " " \_\_\_\_\_

" 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? —&gt;

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.



## SHAFTING.

Are the Crank Shafts Built or Solid?

BUILT.

No. of Lengths in each ONE.

Angle of Cranks

120°

Diar. by Rule 7.33.

Actual 7 $\frac{5}{8}$ "In Way of Webs 7 $\frac{3}{4}$ "

" of Crank Pins 7.625.

Length between Webs

7 $\frac{1}{4}$ "

Greatest Width of Crank Webs

15"

Thickness

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

Least

12 $\frac{1}{4}$ "

"

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

Diar. of Keys in Crank Webs

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

Length

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

DOWELS

" Dowels in Crank Pins

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

Screwed or Plain

PLAIN.

No. of Bolts each Coupling

6.

Diar. at Mid Length

13 $\frac{3}{4}$ "

Diar. of Pitch Circle

12"

Greatest Distance from Edge of Main Bearing to Crank Web

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

Type of Thrust Blocks

HORSE SHOE TYPE

No. " Rings

4.

Diar. of Thrust Shafts at bottom of Collars

7 $\frac{5}{8}$ "

No. of Collars

4

" " Forward Coupling

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

At Aft Coupling

13 $\frac{3}{4}$ "

Diar. of Intermediate Shafting by Rule

—

Actual —

No. of Lengths —

No. of Bolts, each Coupling

—

Diar. at Mid Length —

Diar. of Pitch Circle —

Diar. of Propeller Shafts by Rule

7.87.

Actual 8 $\frac{1}{2}$ "

At Couplings

7 $\frac{5}{8}$ "

Are Propeller Shafts fitted with Continuous Brass Liners?

YES.

Diar. over Liners

9 $\frac{1}{2}$ "

Length of After Bearings

3'-0"

Of what Material are the After Bearings composed?

LIGNUM VITAE.

Are Means provided for lubricating the After Bearings with Oil?

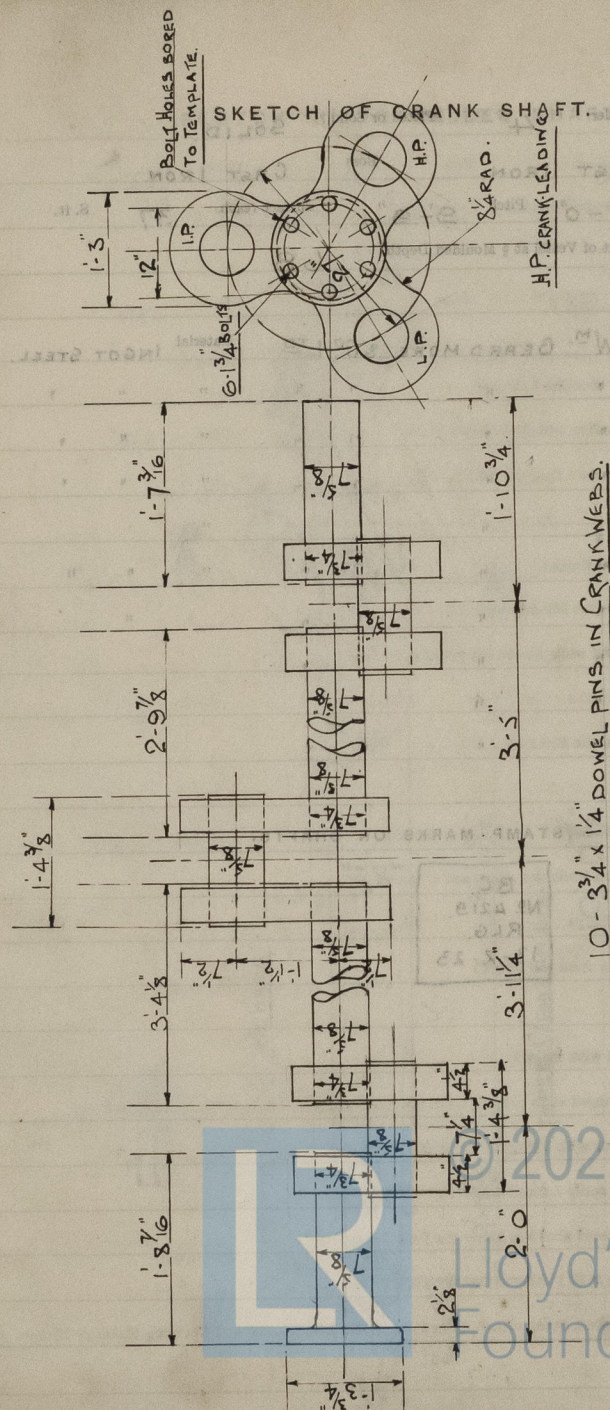
N<sup>o</sup>.

" " to prevent Sea Water entering the Stern Tubes?

N<sup>o</sup>.

If so, what Type is adopted? ✓

## SKETCH OF CRANK SHAFT.



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No. of Blades each Propeller	4	Fitted or Solid?	SOLID.
Material of Blades	CAST IRON.	Boss	CAST IRON.
Diam. of Propellers	10' - 0"	Pitch	9' - 9"
		Surface (each)	37
Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth	.68		

Crank Shafts Forged by W<sup>m</sup>. BEARD MORE & CO LTD. Material INGOT STEEL

" Pins	"	8	11	7	7	10	"	"	9
" Webs	"	11	9	11	7		"	"	
Thrust Shafts	"	11	11	7	7		"	9	7
Intermed. "	"		11				"		
Propeller	"	11	11	11	11		"	11	11
Crank	" Finished by	11	11	11	11			11	
Thrust	"	11	11	11	9				
Intermed. "	"	11	11						
Propeller	"	11	11	11	11				

STAMP MARKS ON SHAFTS.

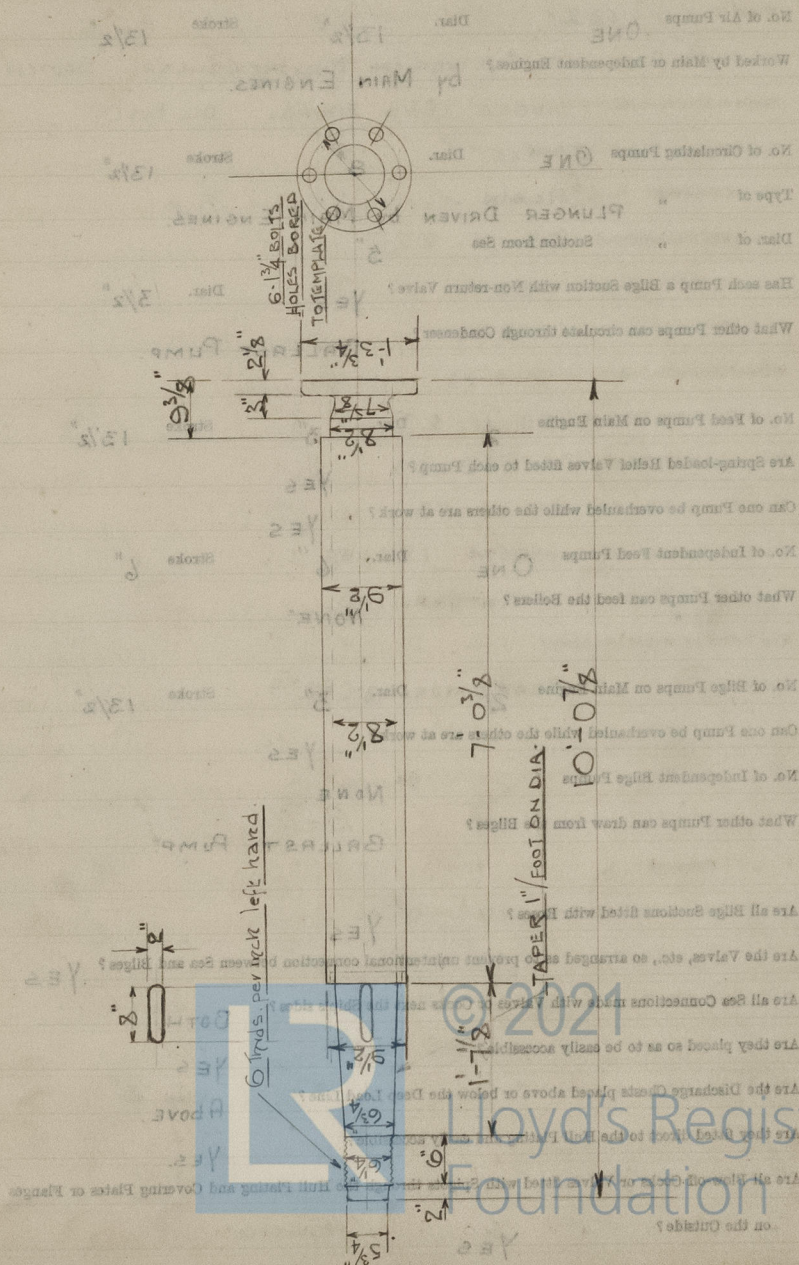
CRANK SHAFT.

THRUST "

PROPELLER "

BC.  
NO. 4219.  
RLG.  
13-2-23

SKETCH OF PROPELLER SHAFT.





## PUMPS, ETC. NOTES

No. of Air Pumps **ONE** Diar. **13/2"** Stroke **13/2"**

Worked by Main or Independent Engines? **by MAIN ENGINES.**

No. of Circulating Pumps **ONE** Diar. **8"** Stroke **13/2"**

Type of **" PLUNGER DRIVEN by MAIN ENGINES.**

Diar. of **" Suction from Sea 5"**

Has each Pump a Bilge Suction with Non-return Valve? **YES** Diar. **3/2"**

What other Pumps can circulate through Condenser? **BALLAST PUMP.**

No. of Feed Pumps on Main Engine **2** Diar. **3"** Stroke **13/2"**

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

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

No. of Independent Feed Pumps **ONE** Diar. **6"** Stroke **6"**

What other Pumps can feed the Boilers? **NONE**

No. of Bilge Pumps on Main Engine **2** Diar. **3"** Stroke **13/2"**

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

No. of Independent Bilge Pumps **NONE.**

What other Pumps can draw from the Bilges? **BALLAST PUMP.**

Are all Bilge Suctions fitted with Roses? **YES**

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

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

Are they placed so as to be easily accessible? **YES**

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

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

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

## BOILERS

Works No. **152**

No. of Boilers **ONE** The Cylindrical Multitubular "SCOTCH"

Single or Double-ended **SINGLE END FIRING.** Oil Fuel

No. of Furnaces in each **THREE**

Type of Furnaces **PLAIN**

Date when Plan approved **22-11-22**

Approval Working Pressure **180 lbs**

Hydraulic Test Pressure **250 lbs**

Date of Hydraulic Test **27-2-23**

When Safety Valves set **20-4-23**

Pressure at which Valves were set **180 lbs**

Date of Accumulation Test **20-4-23**

Maximum Pressure under Accumulation Test **180 lbs**

System of Drafting **NATURAL**

Can Boilers be worked separately

Names of Plates **WM DEARDMORE & CO LTD**

Size of Plate **"**

Direction **"**

Thickness **"**

Greatest Internal Diam. of Boilers **14'-0"**

Length **10'-11 1/2"**

Radius Test of Heating Surface and Plates **250 lbs**

Grade **"**

No. of Safety Valves each Boiler **2**

Are the Safety Valves fitted with Flanges **YES**

No. of Blow-off Cocks each Boiler **2**

Are the Blow-off Cocks fitted with Spigots **"**



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Thickness of End Plates in Steam Space Approved  $17/32$ "

" " " " " in Boilers "

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

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

" " " " " in Boilers " "

Material of " " " STEEL 28-32

How are Stays Secured? DOUBLE NUTS (ONE INSIDE & ONE OUTSIDE)

Diar. and Thickness of Loose Washers on End Plates NONE.

" " " " Riveted " " "

Width " " Doubling Strips " "

Thickness of Middle Back End Plates Approved  $25/32$ "

" " " " " in Boilers "

Thickness of Doublings in Wide Spaces between Fireboxes -

Pitch of Stays at " " " "  $14 1/4" \times 8"$

Diar. of Stays Approved  $13/4"$  MARGINAL 2" CORNER Threads per Inch 9.

" " " " in Boilers  $1 1/2"$  INNER "

Material " STEEL 26-30

Are Stays fitted with Nuts outside? YES

Thickness of Back End Plates at Bottom Approved  $25/32$ "

" " " " " in Boilers "

Pitch of Stays at Wide Spaces between Fireboxes  $15" \times 8"$

Thickness of Doublings in " "  $9/16"$

Thickness of Front End Plates at Bottom Approved  $27/32$ "

" " " " " in Boilers "

No. of Longitudinal Stays in Spaces between Furnaces NONE.

Plan 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 Diam. of Tubes

Material

Thickness of Furnace Plates Approved

" " " " " in Boilers

Smallest outside Diam. of Furnaces

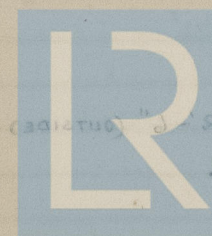
Length between Tube Plates

Width of Combustion Chambers (Front to Back)

Thickness of

" " " " " in Boilers

Pitch of Screwed Stays in C.O. Tube



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

" " " in Boilers " "

Material " " STEEL

Thickness of Combustion Chamber Sides Approved  $1\frac{1}{16}"$

" " " in Boilers "

Pitch of Screwed Stays in C.O. Sides  $9" \times 10"$

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

" " " in Boilers " "

Material " " STEEL

Thickness of Combustion Chamber Backs Approved  $9\frac{1}{16}"$

" " " in Boilers "

Pitch of Screwed Stays in C.O. Backs  $7\frac{1}{2}" \times 8"$

Diam. " " Approved  $1\frac{1}{2}"$  Threads per Inch 9

" " " in Boilers " "

Material " " STEEL

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

Thickness of Combustion Chamber Bottoms  $1\frac{1}{16}"$

No. of Girders over each Wing Chamber 4

" " " Centre " 2

Depth and Thickness of Girders  $7\frac{3}{4}" \times 2\frac{3}{32}"$

Material of Girders STEEL

No. of Stays in each TWO

No. of Tubes, each Boiler 224 TOTAL

Size of Lower Manholes  $15" \times 11"$  MACNEIL

# VERTICAL DONKEY BOILERS

No. of Boilers Type

Greatest Int. Diam. Height

Height of Boiler Crown above Fire Grate

Are Boiler Crowns Flat or Dished?

Internal Radius of Dished Ends Thickness of Plates

Description of Stays in Boiler Crown

Diam. of Rivet Holes Width of Overlap

Height of Firebox Crown above Fire Grate

Are Firebox Crowns Flat or Dished?

External Radius of Dished Crowns Thickness of Plates

No. of Crown Stays Material Diam.

Internal Diam. of Firebox at Top Thickness of Plates Bottom

No. of Water Tubes External Diam.

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

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Pressure on Valves

Date when Safety Valves set



## 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 —

Diarr. 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 — Diarr. — Material —

External Diarr. of Firebox at Top — Bottom — Thickness of Plates —

No. of Water Tubes — Ext. Diarr. — 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 — Diarr. —

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 —

Braced, Welded or Seamed? —

Internal Diarr. —

Thickness —

How are Flanges secured? —

Date of Hydraulic Test —

Test Pressure —

No. of Pipes —

Material —

Braced, Welded or Seamed? —

Internal Diarr. —

Thickness —

How are Flanges secured? —

Date of Hydraulic Test —

Test Pressure —



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## MAIN STEAM PIPES.

No. of Lengths	ONE
Material	COPPER.
Brazed, Welded or Seamless	SEAMLESS.
Internal Diam.	3 1/2"
Thickness	7/16"
How are Flanges secured?	BRAZED
Date of Hydraulic Test	5-4-23 J.M. Ward
Test Pressure	400 lbs

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	

## EVAPORATORS

## FEED WATER HEATERS

## FEED WATER FILTERS



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## EVAPORATORS.

No.	Type	Makers	Working Pressure	Test Pressure	Date of Test	Tons per Day
	ONE					

Date of Test of Safety Valves under Steam

## FEED WATER HEATERS.

No.	Type	Makers	Working Pressure	Test Pressure	Date of Test
	400				

## FEED WATER FILTERS.

No.	Type	Makers	Working Pressure	Test Pressure	Date of Test	Size

## LIST OF DONKEY PUMPS.

One Langye Duplex Pump  
6" x 4" x 6"

One Dawson & Downies Duplex Pump  
6" x 7" x 7"

2 deep cranked bolts and nuts  
2 pump flanges & washers  
one set valves for hand pump  
two 1/2" x 1/2" x 1/2" x 1/2"



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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.

COMPARTMENT.	Temp. at beginning of Trial.	Temp. at end of Trial.	Time required to obtain this Result.	Rise of Temp. after hours.
Capacity	20	18	30	
Current Alternation				
Direction of Rotation				
No. of Revolutions				
Particulars of Test				
Navigation	7	16	10	15.0
Accommodation	22	16	10	15.0
Cabin	8	16	10	15.0
Cargo	4	16	10	15.0

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



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

*Switch boards.**no auxiliary*

Are Out-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits

*yes*

On Aux. " " each Auxiliary Circuit

*✓*

Wherever a Cable is reduced in size

*yes*

To each Lamp Circuit

*yes*

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 Out-outs constructed of Non-inflammable Material?

*yes*

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

*yes*

Smallest Single Wire used, No. 3'024 cables S.W.G., Largest, No. 7'004 c S.W.G.

How are Conductors in Engine and Boiler Spaces protected? *Lead covered armoured & braided*" Saloons, State Rooms, &c., " ? *Lead covered.*

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp *Armoured & galv<sup>d</sup> tubes*(2) " passing through Bunkers or Cargo Spaces *none*(3) " " Deck Beams or Bulkheads *Lead bushes & W. Y. glands*

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

is unimpaired? *no joints*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?

*4'000000 Ohms.*

Is the Installation supplied with a Voltmeter?

*yes*

" " " an Ampere Meter?

*yes*Date of Trial of complete Installation *18-4-23* Duration of Trial *6 hours*

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.

Fees—

## MAIN BOILERS.

£ s. d.

H.S. Sq. ft. : :

G.S. " : :

## DONKEY BOILERS.

H.S. Sq. ft. : :

G.E. " : :

£ : :

## ENGINES.

L.P.C. Cub. ft. : :

£ : :

Testing, &c. ... : :

£ : :

Expenses ... : :

Total ... £ : :

It is submitted that this Report be approved,

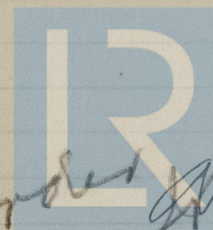
*W. L. King*  
Chief Surveyor.

Approved by the Committee for the Class of M.B.S.\* on the

23<sup>rd</sup> May 1923

Fees advised

Fees paid



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In order *W. L. King*  
Secretary.

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

*Thos. L. George*  
*Robert H. Craig*  
Engineer Surveyors to the British Corporation for the  
Survey and Registry of Shipping.



## GENERAL CONSTRUCTION

Total

MAN BOILER

H.S.

Sd. 12

DONKEY BOILER

H.S.

Sd. 12

G.S.

ENGINEER

L.P.C.

Oct. 12

Expenses

Total

It is submitted that this Report be approved.

Now advised

Now paid



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