

No. 2366

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. 2368 No. in Register Book 3780.

N.N. Kaiyo Maru

" " S.S. BRADBURN

Makers of Engines Central Marine Engine Works.

Works No. 1035

Makers of Main Boilers Central Marine Engine Wks.

Works No. 1035

Makers of Donkey Boiler ✓

Works No. ✓

MACHINERY.



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008743-008750-003



No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. 12-11-1930 No. in Register Book 1030

Received at Head Office 12<sup>th</sup> August 1930

Surveyor's Report on the New Engines, Boilers, and Auxiliary Machinery of the ~~Single Engine~~ Screw *Steamer* "Bradburn"

Official No.

Port of Registry *Bideford*

Registered Owners

*Sir W.R. Smith, Sons & Co.*

Engines Built by

*Central Marine Engine Works*

at

*West Hartlepool*

Main Boilers Built by

*Central Marine Eng. Works*

at

*West Hartlepool*

Donkey

at

Date of Completion

*4-30*

First Visit

*12-8-29*

Last Visit

*30-4-30*

Total Visits

*50*

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## RECIPROCATING ENGINES.

Works No. **1035** No. of Sets **1** Description **Quadruple expansion  
S.P. & crks.**

No. of Cylinders each Engine **4** No. of Cranks **4**  
Diars. of Cylinders **20"-28½"-41½"-61"** Stroke **48"**

Cubic feet in each L.P. Cylinder **81.18**

Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.? **Y. 1st & 2nd M.P.**

" each Receiver? **M.P. + L.P.**

Type of H.P. Valves, **Piston.**

1st I.P. "

2nd I.P. "

L.P. "

" Valve Gear **slide**

" Condenser **Surface**

Diameter of Piston Rods (plain part) **6"**

Screw part (bottom of thread) **4 5/32**

Material **I.P.**

Diars. of Connecting Rods (smallest part) **6"**

Material **Iron.**

" Crosshead Gudgeons **6½"**

Length of Bearing **6½"**

Material **Steel 35 to 40 tons.**

No. of Crosshead Bolts (each) **4**

Diars. over Thrd **2½"**

Threds. per inch **6**

Material **Steel.**

" Crank Pin " **2**

" **3 3/8"**

" **6**

" Main Bearings **6**

Lengths **11 7/8", 21 7/8", 14 1/2", 14 1/2", 16 7/8", 13 1/8"**

" Bolts in each **4-4**

Diars. over Thread **2 7/8"**

Threds. per inch **6**

Material **Steel.**

" Holding Down Bolts, each Engine **115**

Diars. **1 3/8"**

No. of Metal Chocks **115**

Are the Engines bolted to the Tank Top or to a Built Seat? **Tank top.**

Are the Bolts tapped through the Tank Top and fitted with Nuts Inside? **no.**

If not, how are they fitted? **Fitted bolts with nuts & washers**

**each side of tank top plate.**

Connecting Rods, Forged by **Chubb.**

Piston " " **Dealville Sons**

Crossheads, " " **Chubb.**

Connecting Rods, Finished by **Chubb.**

Piston " " **"**

Crossheads, " " **"**

Date of Harbour Trial **16-4-39**

" Trial Trip **30-4-30**

Trials run at **Between Northfleet & Lynce.**

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

If so, what was the I.H.P.? **1948**

Revs. per min. **82**

Pressure in 1st I.P. Receiver, **105** lbs., 2nd I.P., **38** lbs., L.P., **3.5** lbs., Vacuum, **25** ins.

Speed on Trial **11.7 knots.**

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

data:—

Builders' estimated I.H.P.

Revs. per min.

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

" 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

" " 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 MACHINERY. DESCRIPTION OF INSTALLATION.

No. of Turbo-Generating 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

Plan of 1st Reduction Pinion

Estimated Pressure per lineal inch

Plan of 2nd Reduction Pinion

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.

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

" 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 "

" " 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

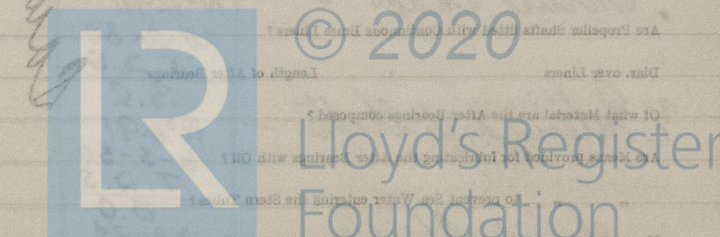
Turbine Spindles forged by

" 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?

No. of Lengths in each

Angle of Cranks

Diar. by Rule

Actual

13 1/4

In Way of Webs

" of Crank Pins

Length between Webs

Greatest Width of Crank Webs

Thickness

Least

Diar. of Keys in Crank Webs

Length

" Dowels in Crank Pins

Length

Screwed or Plain

No. of Bolts each Coupling

Diar. at Mid Length

Diar. of Pitch Circle

Greatest Distance from Edge of Main Bearing to Crank Web

Type of Thrust Blocks

No. " Rings

Diar. of Thrust Shafts at bottom of Collars

No. of Collars

" " Forward Coupling

At Aft Coupling

Diar. of Intermediate Shafting by Rule

Actual

12 5/8

No. of Lengths

No. of Bolts, each Coupling

Diar. at Mid Length

Diar. of Pitch Circle

Diar. of Propeller Shafts by Rule

Actual

14 1/2

At Coupling

Are Propeller Shafts fitted with Continuous Brass Liners?

Diar. over Liners

Length of After Bearings

Of what Material are the After Bearings composed?

Are Means provided for lubricating the After Bearings with Oil?

" " to prevent Sea Water entering the Stern Tubes?

If so, what Type is adopted?

Victoria City  
Same as

## SKETCH OF CRANK SHAFT.

No. of Blades each Propeller  
 Material of Blades  
 Diam. of Propellers  
 Pitch  
 Surface (each)  
 Coefficient of Displacement of Vessel as % Normal Depth

Crank Shafts forged by  
 " Pins  
 " Webs  
 " Thrust Shafts  
 " Intermed.  
 " Propeller  
 Crank " Finished by  
 " Thrust  
 " Intermed.  
 " Propeller

## STAMP MARKS ON SHAFTS.

0.0
1840
20-2-00
T.O.T
0.0
1840
20-2-00
T.O.T
0.0
1840
20-2-00
T.O.T
0.0
1840
20-2-00
T.O.T

Crank Shaft:-

Thrust Shaft:-

Intermediate Shaft:-

Propeller Shaft:-

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No. of Blades each Propeller <sup>4</sup> Fitted or Solid? *split.*  
 Material of Blades *brass* Boss *brass*  
 Diam. of Propellers *18'-0"* Pitch *15'-0"* Surface (each) *103* S. ft.)  
 Coefficient of Displacement of Vessel at  $\frac{1}{2}$  Moulded Depth

Crank Shafts Forged by

*Vickers Armstrong.*

Material

*I.S.*

,, Pins ,,

,, Webs ,,

Thrust Shafts ,,

Intermed. ,,

Propeller ,,

Crank ,, Finished by

*Chubb.*

Thrust ,,

Intermed. ,,

Propeller ,,

## STAMP MARKS ON SHAFTS.

Crank Shaft:-

B. C.  
 N° 489  
 20-2-30  
 J. D. S.

Thrust Shaft:-

B. C.  
 N° 490  
 20-2-30  
 J. D. S.

2. Intermediate Shafts:-

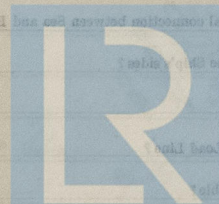
B. C.  
 N° 491  
 6-5-30  
 J. D. S.

Said Shaft:-

B. C.  
 N° 492  
 6-3-30  
 J. D. S.

## SKETCH OF PROPELLER SHAFT.

No. of Air Pumps  
 Worked by Main or Independent Engines?  
 No. of Circulating Pumps  
 Type of  
 Diam. of  
 Section from Sea  
 Has each Pump a High Section with Non-return Valve?  
 What other Pumps can circulate through Condenser?  
 No. of Feed Pumps on Main Engine  
 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  
 What other Pumps can feed the Boiler?  
 No. of High Pumps on Main Engine  
 Can one Pump be overhauled while the others are at work?  
 No. of Independent High Pumps  
 What other Pumps can draw from the Bilges?  
 Are all High Sections fitted with Relief?  
 Are the Valves, etc., arranged so that every functional connection between Sea and Bilges?  
 Are all Sea Connections made with Valves on Coast (not the Ship's) Side?  
 Are they placed so as to be easily accessible?  
 Are the Discharge Pipes placed so below the Deep Load Line  
 Are they fitted direct to the Bilge Flaming and easily accessible?  
 Are all Pipes, etc., fitted with Flanges through the Hull Plating and Covering Plates or Flanges on the Outside?



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## BOILERS

Works No. *1035*  
 No. of Boilers *2* Type *Cylindrical multitubular*  
 Single or Double-ended *single.*  
 No. of Furnaces in each *3*  
 Type of Furnaces *Slighton*  
 Date when Plan approved *2-4-29*  
 Approved Working Pressure *260 lbs.*  
 Hydraulic Test Pressure *440 "*  
 Date of Hydraulic Test *19-2-30*  
 " when Safety Valves set *16-4-30*  
 Pressure at which Valves were set *270 lbs.*  
 Date of Accumulation Test *16-4-30*  
 Maximum Pressure under Accumulation Test *270 lbs.*  
 System of Draught *C.A.*  
 Can Boilers be worked separately?  
 Makers of Plates *Dealville Sons.*  
 " Stay Bars  
 " Rivets  
 " Furnaces  
 Greatest Internal Diam. of Boilers *15'-6"*  
 " " Length " *11'-10"*  
 Square Feet of Heating Surface each Boiler *2755 sq*  
 " " Grate " " *55.4 sq*  
 No. of Safety Valves each Boiler *2* Rule Diam. Actual *2 1/2"*  
 Are the Safety Valves fitted with Easing Gear? *yes.*  
 No. of Pressure Gauges, each Boiler *2* No. of Water Gauges *2*  
 " Test Cocks " *-* " Sallinometer Cocks *1*

*R. B. & Co. Ltd.*  
*John Thompson.*

## AUXILIARY MAIN BOILER.

*1035*  
 1. *Cylindrical multitubular*  
*single.*  
*2*  
*Slighton.*  
*2-4-29*  
*260 lbs.*  
*440 "*  
*19-2-30*  
*16-4-30*  
*270 lbs.*  
*16-4-30*  
*270 lbs.*  
*C.A.*  
*Dealville Sons.*  
*R. B. & Co. Ltd.*  
*John Thompson.*  
*12'-0"*  
*10'-10 3/4"*  
*1515 sq*  
*34.7 sq*  
*2*  
*yes.*  
*1*  
*3*

*2*  
*yes.*  
*1*  
*1*  
*1*  
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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

Threads per Inch

Thickness of End Plates Approved

" " " in Boilers

Material

Thickness of Front End 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 End Plates Approved

" " " in Boilers

Pitch of Stay Tubes in Back End Plates

" " " " "

Thickness of Stay Tubes

" " " " "

Material of Tubes

" " " "

Thickness of Furnace Plates Approved

" " " in Boilers

Smallest outside Diam. of Furnaces

Length between Tube Sheets

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*Same as sp*  
*Victoria City*



Diar. 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 Diar. of Tubes

Material "

Thickness of Furnace Plates Approved

" " " in Boilers

Smallest outside Diar. 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

Threads per Inch

Diar. of Screwed Stays Approved

" " in Boilers

Material "

Thickness of Combustion Chamber Sides Approved

" " in Boilers

Pitch of Screwed Stays in C.O. Sides

Threads per Inch

Diar. of Screwed Stays Approved

" " in Boilers

Material "

Thickness of Combustion Chamber Ends Approved

" " in Boilers

Pitch of Screwed Stays in C.O. Ends

Threads per Inch

Diar. of Screwed Stays Approved

" " in Boilers

Material "

Are all Screwed Stays fitted with Nuts inside C.O.'s

Thickness of Combustion Chamber Bottoms

Pitch of Stays over and under Chambers

" " in Boilers

Length and Thickness of Stays

Material of Stays

Pitch of Stays in and over Water Chambers

Pitch of Stays in and over Water Chambers

Pitch of Stays in and over Water Chambers

Pitch of Stays in and over Water Chambers



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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.C. Sides

Diam. " " Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. 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

*Same as 1/3 Victoria City*

*Superheaters fitted in  
boiler tubes in  
the upper part of  
the boiler.*



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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		
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. *Superheater tubes fitted in Boiler tubes; headers & tubes in uptakes made by the Superheater Co. London.*

Where situated? *In tubes uptakes.*

Which Boilers are connected to Superheaters? *2 Main Boilers.*

Can Superheaters be shut off while Boilers are working? *yes.*

No. of Safety Valves on each Superheater *2* Diarr. *1 1/2" high lift.*

Are " " fitted with Easing Gear? *yes.*

Date of Hydraulic Test *6-3-30* Test Pressure *5-20 lbs.*

Date when Safety Valves set *16-4-30* Pressure on Valves *2 1/2 lbs.*

## MAIN STEAM PIPES

No. of Pipes	1	1	2	2
Material	Steel	Steel	Steel	Steel
Pressure, Working or Maximum	18	18	18	18
Internal Diarr.	18	18	18	18
Thickness	1/16	1/16	1/16	1/16
How are Flanges secured?				
Date of Hydraulic Test	11-3-30	10-2-30	10-2-30	10-2-30
Test Pressure	18	18	18	18

No. of Pipes	1	2
Material	Steel	Steel
Pressure, Working or Maximum	18	18
Internal Diarr.	18	18
Thickness	1/16	1/16
How are Flanges secured?		
Date of Hydraulic Test	10-4-30	10-4-30
Test Pressure	18	18

*Superheater Tubes & Headers tested at 2 1/2 lbs.*

*Superheater Tubes & Headers tested at 2 1/2 lbs.*



## MAIN STEAM PIPES.

No. of Lengths	2	2	1	1
Material	Steel Sawmilled.			
Brazed, Welded or Seamless				
Internal Diam.	4 3/8" 5/16"	4 7/8" 5/16"	4 7/8" 5/16"	4 7/8" 5/16"
Thickness	Brazed.			
How are Flanges secured?				
Date of Hydraulic Test	11-3-30	10-3-30	28-3-30	31-3-30
Test Pressure	780 lbs.			

No. of Lengths	2	2	1
Material	Steel Sawmilled.		
Brazed, Welded or Seamless			
Internal Diam.	4 7/8" 5/16"	4 7/8" 5/16"	4 3/8" 5/16"
Thickness	Screwed.		
How are Flanges secured?			
Date of Hydraulic Test	2-4-30	9-4-30	14-4-30
Test Pressure	780 lbs.		

No. of Lengths	8	2	1
Material	Steel Sawmilled.		
Brazed, Welded or Seamless			
Internal Diam.	3 1/2" 1/4"	3 1/2" 1/4"	3 1/2" 1/4"
Thickness	Screwed.		
How are Flanges secured?			
Date of Hydraulic Test	10-3-30	24-3-30	24-3-30
Test Pressure	780 lbs.		

Superheater M. S. pipes.

## LIST OF ROTARY PUMPS.

No.	1
Type	Vertical
Material	Cast Iron
Working Pressure	15 lbs.
Test Pressure	30 lbs.
Date of Test	11-2-30

## FEED WATER HEATERS.

No.	1
Type	Horizontal
Material	Cast Iron
Working Pressure	20 lbs.
Test Pressure	40 lbs.
Date of Test	11-2-30

## FEED WATER FILTERS.

No.	1
Type	Horizontal
Material	Cast Iron
Working Pressure	20 lbs.
Test Pressure	40 lbs.
Date of Test	11-2-30



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## EVAPORATORS.

No. 1 Type *Ch. l.w.* Tons per Day *25*  
 Makers *Centrap Marine Engine Works*  
 Working Pressure *15 lbs.* Test Pressure *50 lbs.* Date of Test *14-2-30*  
 Date of Test of Safety Valves under Steam *16-4-30*

## FEED WATER HEATERS.

No. 1 Type *Surface.*  
 Makers *Ch. l.w.*  
 Working Pressure *260 lbs.* Test Pressure *600 lbs.* Date of Test *2-3-30*  
*also one direct contact heater by Ch. l.w.*  
*tested to 50 lbs on 25-2-30.*

## FEED WATER FILTERS.

No. 1 Type *Gravity*  
 Makers *Ch. l.w.*  
 Working Pressure Test Pressure Date of Test

## LIST OF DONKEY PUMPS.

*Ch. l.w.* Ballast pump. *9" x 10 1/2" x 10" Suxler*  
 " General Service " *7 1/2" x 5" x 6"*  
 " Harbor Feed " *7 1/2" x 5 1/2" x 15" Lingler*  
 " Oil Transfer " *6 1/2" x 8" x 18"*



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No. of Top End Bolts.	No. of Bot. End Bolts.	No. of Cylinder Cover Studs
" Coupling Bolts	" Main Bearing Bolts	" Valve Chest "
" Junk Ring Bolts	" Feed Pump Valves	" Bilge Pump Valves
" 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
" Cir. "	" Cir. "	" Cir. "
" Crank Shafts	" Crank Pin Bushes	" Crosshead Bushes
" Propeller Shafts	" Propellers	" Propeller Blades
" Boiler Tubes	" Condenser Tubes	" Condenser Ferrules

OTHER ARTICLES OF SPARE GEAR:—

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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.
No. and Name of Machine				
Capacity	109			
Current Absorption of Machine				
Single or Double Wire System				
Position of Dynamo				
Main Switch Board				
No. of Circuits to which Dynamo is connected on Main Switch Board				
Particulars of other Circuits				

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



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## RECORD BOOK

LIGHT TO BE USED

No. of Machines  
Type of  
Machines  
Time required  
to obtain  
this result  
Time to  
start  
Time to  
stop  
Time to  
start  
Time to  
stop

No. of Steam Cylinders, each Machine  
No. of Compositions  
No. of Candles

Particulars of Springs in connection with Refrigerating Plant and whether  
or Independently

System of Refrigeration

Insulation

Space?

Are all Pipes, Air Vessels, etc., well secured and protected from risk of damage?

Are all Ribs, Framing, and Air Pipes in Insulated Space properly insulated?

Are Thermometer Tubes so arranged that Water cannot enter and freeze in them?

Date of Test under Working Conditions

## ELECTRIC LIGHTING.

Installation Fitted by

Clarke Chapman &amp; Co. Ltd.

No. and Description of Dynamos

One compound wound.

Makers of Dynamos

Clarke Chapman &amp; Co. Ltd.

Capacity

109

Amperes, at

110

Volts,

350

Revolts, per Min.

Current Alternating or Continuous

Continuous.

Single or Double Wire System

Double.

Position of Dynamos

Starting platform.  
Near dynamo.

Main Switch Board

No. of Circuits to which Switches are provided on Main Switch Board

5

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.
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Same as s/s "Victoria City"

Total No. of Lights

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

No. of Heaters

Current required for Motors and Heaters

Peak Heaters or Boilers

(6)



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

Are Cut-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 Cut-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 over the whole system been tested?

What does the Resistance amount to?

Ohms,

Is the Installation checked with a Voltmeter?

an Ampere Meter

Date of Trial of complete Installation 30-4-30 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.

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.

**BRADBURN**

as ascertained by *me* from personal examination

*J. W. Stephenson*  
 Engineer Surveyor to the British Corporation for the  
 Survey and Registry of Shipping.

Fees—

MAIN BOILERS.		£	s.	d.
H.S.	5510 Sq. ft.	:	:	:
G.S.	110.8 "	:	:	:
<del>MAIN</del> BOILERS.				
H.S.	1575 Sq. ft.	:	:	:
G.S.	34.7 "	:	:	:
		£	:	:
ENGINES.				
L.P.C.	81.18 Cub. ft.	:	:	:
		£	:	:
Testing, &c. ... ..		:	:	:
		£	:	:
Expenses ... ..		:	:	:
Total ...		£	:	:

It is submitted that this Report be approved,

*W. H. King*  
 Chief Surveyor.

Approved by the Committee for the Class of M.B.S.\* on the 20<sup>th</sup> August 1930.

Fees advised

Fees paid



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*C. A. Massie*  
 Secretary.



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