

No. 2473

THE BRITISH CORPORATION REGISTER  
OF SHIPPING AND AIRCRAFT.

Report No. 2528 No. in Register Book 4037

N/W 'Ballysillar'  
S.S. NISHTRAHULL

Makers of Engines JOHN LEWIS & SONS LTD

Works No. 213

Makers of Main Boilers JOHN LEWIS & SONS LTD

Works No. 177

Makers of Donkey Boiler

Works No.

MACHINERY.

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003191-003194-0203



No.

THE BRITISH CORPORATION REGISTER  
OF SHIPPING AND AIRCRAFT.

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

Received at Head Office .....

Surveyor's Report on the New Engines, Boilers, and Auxiliary  
Machinery of the ~~Single~~ <sup>Triple</sup> Screw STEAMER

INNISTRATHULL

Official No. 163217

Port of Registry

Belfast

Registered Owners

JOHN KELLY LTD

Engines Built by

JOHN LEWIS & SONS LTD

at

ABERDEEN

Main Boilers Built by

JOHN LEWIS & SONS LTD

at

ABERDEEN

Donkey

at

Date of Completion

First Visit

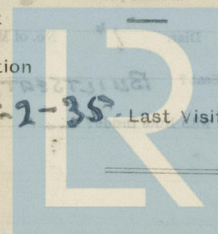
18-2-35

Last Visit

31-7-35

Total Visits

10



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## RECIPROCATING ENGINES.

Works No. 213 No. of Sets ONE Description TRIPLE EXPANSION,  
SURFACE CONDENSING, DIRECT ACTING, INVERTED, RECIPROCATING  
STEAM ENGINES.

No. of Cylinders each Engine 3 No. of Cranks 3  
Diars. of Cylinders 14 1/2" 25" 41" Stroke 30"

Cubic feet in each L.P. Cylinder 22.92 CF

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

" " each Receiver? YES

Type of H.P. Valves, PISTON

1st I.P. " ANDREW CAMERON BALANCED

2nd I.P., —

L.P. " SLIDE D.

" Valve Gear STEPHENSON LINK MOTION.

" Condenser CAST IRON CIRCULAR Cooling Surface 893 sq. ft.

Diameter of Piston Rods (plain part) 4 1/4" Screwed part (bottom of thread) 3.04"

Material " MILD STEEL.

Diar. of Connecting Rods (smallest part) 4 1/4" Material M.S.

" Crosshead Gudgeons 4 1/4" Length of Bearing 4 1/4" Material "

No. of Crosshead Bolts (each) 4 Diar. over Thrd. 1 3/4" Thrds. per inch 6 Material M.S.

" Crank Pin " " 2 " 2 1/4" " 6 "

" Main Bearings 6 Lengths 8 7/8"

" Bolts in each 2 Diar. over Thread 2" Threads per inch 6 Material M.S.

" Holding Down Bolts, each Engine 5 1/8" Diar. 1" No. of Metal Chocks 50

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

FIFE FORGE CO LTD. Langley Forge

Piston " "

LANGLEY FORGE LTD J Lewis

Crossheads, " "

do.

Connecting Rods, Finished by

JOHN LEWIS & SONS

Piston " "

Crossheads, " "

Date of Harbour Trial

29-7-35  
31-7-35

" Trial Trip

Trials run at

Aburdeen Bay

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

yes

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

Revs. per min. 108

Pressure in 1st I.P. Receiver, 70 lbs., 2nd I.P., lbs., L.P., 1 1/2 lbs., Vacuum, 24 1/2 ins.

Speed on Trial 11.6. cec letter 9-8-35

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

data:—

Builders' estimated I.H.P.

907.

Revs. per min. 103

Estimated Speed

12 knots.



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

## TURBO-ELECTRIC INSTALLATION OF MACHINERY.

No. of Turbo-Generating Sets \_\_\_\_\_ Capacity of each \_\_\_\_\_

Type of Turbines employed \_\_\_\_\_

Description of Installation \_\_\_\_\_

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 \_\_\_\_\_

" " Motors \_\_\_\_\_

" 1st Reduction Shaft \_\_\_\_\_

" 2nd " \_\_\_\_\_

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 —	}	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 **8.16** Actual **8 3/8"** In Way of Webs **8 3/4"**

" of Crank Pins **8 3/8"** Length between Webs **8 5/8"**

Greatest Width of Crank Webs **1 - 3 1/4"** Thickness **5 1/2"**

Least " " **1' 0"** " " " " **1 1/2"**

Diar. of Keys in Crank Webs **1 1/2"** Length **3 5/8"**

" Dowels in Crank Pins **1"** Length **3 5/4** Screwed or Plain **PLAIN**

No. of Bolts each Coupling **6** Diar. at Mid Length **1 7/8** Diar. of Pitch Circle **1' - 0 3/4"**

Greatest Distance from Edge of Main Bearing to Crank Web **1 1/4"**

Type of Thrust Blocks **HORSE SHOE**

No. " Rings **5 AHEAD & AFTERN**

Diar. of Thrust Shafts at bottom of Collars **8 3/8"** No. of Collars **5**

" " Forward Coupling **8 3/8"** At Aft Coupling **8 3/8"**

Diar. of Intermediate Shafting by Rule **7.77"** Actual — No. of Lengths —

No. of Bolts, each Coupling — Diar. at Mid Length — Diar. of Pitch Circle —

Diar. of Propeller Shafts by Rule **8.68** Actual **9 7/8"** At Coupling **8 3/8"**

Are Propeller Shafts fitted with Continuous Brass Liners? **YES.**

Diar. over Liners **10 1/8" - 10 1/4"** Length of After Bearings **2' - 11"**

Of what Material are the After Bearings composed? **LIGNUM VITAE**

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.

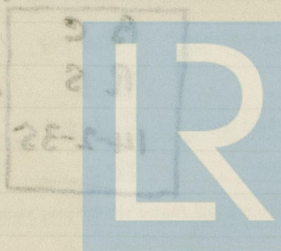
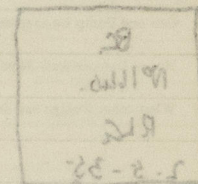
SEE BOOK FOR 1091 T2A2  
SS PORTAVOCIE

*Handwritten notes and sketches of crank shaft components, including labels like 'Crank Shafts', 'Thrust', 'Propeller', and 'Shaft'.*

STAMP MARKS ON SHAFTS.

THREAT AND

PROPELLER SHAFTS



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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'-9"** Pitch **12'-6"** Surface (each **40** S. ft.)  
 Coefficient of Displacement of Vessel at  $\frac{1}{2}$  Moulded Depth  
 Crank Shafts Forged by **Largely Forge** Material **MS**  
 Pins " " " " " "  
 Webs " " " " " "  
 Thrust Shafts " " " " " "  
 Intermed. " " " " " "  
 Propeller " " **W Coats & Sons Sangrehar**  
 Crank " Finished by **FIFE FORGE Co Largely Forge**  
 Thrust " " **J. LEWIS & SONS LTD**  
 Intermed. " " " " " "  
 Propeller " " " " " "

## STAMP MARKS ON SHAFTS.

BE  
 101146.  
 RL  
 2-5-35

THRUST AND  
 PROPELLER SHAFTS.

Thrust Shaft.

BE  
 693  
 R S  
 6-2-35

Tail Shaft

AC  
 RS  
 14-2-35

No Number

## SKETCH OF PROPELLER SHAFT.

Sketch of Propeller Shaft showing details of the shaft, propeller, and various components. The sketch includes labels for the shaft, propeller, and various components, and a detailed description of the shaft's construction and operation.



## PUMPS, ETC.

No. of Air Pumps 1 Diar. 13" Stroke 15"

Worked by Main or Independent Engines? MAIN ENGINES

No. of Circulating Pumps 1 Diar. Stroke

Type of " CENTRIFUGAL

Diar. of " Suction from Sea 6"

Has each Pump a Bilge Suction with Non-return Valve? YES Diar. 4"

What other Pumps can circulate through Condenser? BALLAST PUMP

No. of Feed Pumps on Main Engine 2 Diar. 2 1/4" Stroke 15"

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

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? GENERAL SERVICE PUMP.

No. of Bilge Pumps on Main Engine 2 Diar. 2 3/4" Stroke 15"

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

No. of Independent Bilge Pumps -

What other Pumps can draw from the Bilges? BALLAST.

Are all Bilge Suctions fitted with Roses? HOLDS ER MUD BOXES &amp; TAIL PIPES.

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.

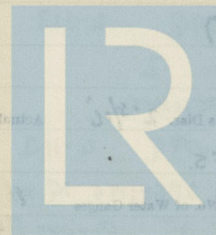
Are the Discharge Chests placed above or below the Deep Load Line? ABOVE

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 Planges on the Outside? YES

## BOILERS

No. of Boilers 1  
 Type of Boilers SINGLE END FIRE  
 No. of Tubes in each THREE  
 Type of Tubes PLAIN (WATERWALL)  
 Date when Plan approved 27-10-23  
 Approved Working Pressure 200 lb/sq in  
 Hydraulic Test Pressure 250 lb/sq in  
 Date of Hydraulic Test 28-1-25  
 when safety Valves set 28-1-25  
 Pressure at which Valves were set 202 lb/sq in  
 Date of Accumulation Test 31-1-25  
 Maximum Pressure under Accumulation Test 202 lb/sq in  
 System of Drafting NATURAL  
 Can Boilers be worked separately? -  
 Name of Plates STEEL CO. OF SCOTLAND  
 Date when Plan approved 27-10-23  
 Approved Working Pressure 200 lb/sq in  
 Hydraulic Test Pressure 250 lb/sq in  
 Date of Hydraulic Test 28-1-25  
 when safety Valves set 28-1-25  
 Pressure at which Valves were set 202 lb/sq in  
 Date of Accumulation Test 31-1-25  
 Maximum Pressure under Accumulation Test 202 lb/sq in  
 System of Drafting NATURAL  
 Can Boilers be worked separately? -  
 Name of Plates STEEL CO. OF SCOTLAND



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## BOILERS

Works No. 177

No. of Boilers 1. Type CYLINDRICAL MULTITUBULAR MARINE.

Single or Double-ended SINGLE END FIRED

No. of Furnaces in each THREE.

Type of Furnaces PLAIN (WITHDRAWABLE)

Date when Plan approved 27-10-33.

Approved Working Pressure 200 lbs/ft<sup>2</sup>Hydraulic Test Pressure 350 lbs/ft<sup>2</sup>

Date of Hydraulic Test 25-6-35.

" when Safety Valves set 29-7-35.

Pressure at which Valves were set 205 lbs.

Date of Accumulation Test 31-7-35.

Maximum Pressure under Accumulation Test 205 lbs.

System of Draught NATURAL.

Can Boilers be worked separately? -

Makers of Plates STEEL CO. OF SCOTLAND.

" Stay Bars COLVILLES LTD.

" Rivets RIVET BOLT 2 NUT CO.

" Furnaces J. Marshall &amp; Co. Ltd.

Greatest Internal Diam. of Boilers 115'-0 3/8"

" " Length " 10'-9"

Square Feet of Heating Surface each Boiler 2357

" " Grate " " 60

No. of Safety Valves each Boiler 2. Rule Diam. 2 5/16" Actual 3"

Are the Safety Valves fitted with Easing Gear? YES.

No. of Pressure Gauges, each Boiler 2

No. of Water Gauges 1

" Test Cocks "

3

" Salinometer Cocks 1



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

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

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

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

No. of Strakes of Shell Plating in each Boiler **1**

„ Plates in each Strake **2**

Thickness of Shell Plates Approved **13/16"**

„ „ in Boilers **"**

Are the Rivets Iron or Steel? **STEEL.**

Are the Longitudinal Seams Butt or Lap Joints? **BUTT**

Are the Butt Straps Single or Double? **DOUBLE**

Are the Double Butt Straps of equal width? **YES.**

Thickness of outside Butt Straps **1**

„ inside „ **1 1/8"**

Are Longitudinal Seams Hand or Machine Riveted? **MACHINE.**

Are they Single, Double, or Treble Riveted? **TREBLE.**

No. of Rivets in a Pitch **5.**

Diam. of Rivet Holes **13/16"** Pitch **9/16"**

No. of Rows of Rivets in Centre Circumferential Seams **5**

Are these Seams Hand or Machine Riveted? **—**

Diam. of Rivet Holes **—** Pitch **—**

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

Are these Seams Hand or Machine riveted? **HAND**

Diam. of Rivet Holes **13/16"** Pitch **4.099. 4.113**

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

Are these Seams Hand or Machine Riveted? **MACHINE.**

Diam. of Rivet Holes **13/16"** Pitch **4.099 4.113.**

Size of Manholes in Shell **16" x 12" DOOR OPENING 19" x 15"**

Dimensions of Compensating Rings **2'-9" x 2'-5" RIVETS 13/16" 40**  
**x 15/16"**

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Thickness of End Plates in Steam Space Approved  $1\frac{1}{4}$ '

" " " " " in Boilers "

Pitch of Steam Space Stays  $1'-8\frac{1}{4}" - 1'-8\frac{1}{2}" \times 1\frac{1}{2}" - 1\frac{1}{2}"$

Diar. " " " " Approved  $8\frac{1}{8}$  Threads per Inch 6

" " " " " in Boilers " "

Material of " " " STEEL

How are Stays Secured? DOUBLE NUTS INSIDE 1027SIDE.

Diar. and Thickness of Loose Washers on End Plates —

" " Riveted " " —

Width " " Doubling Strips " —

Thickness of Middle Back End Plates Approved  $27/32$ '

" " " " " in Boilers "

Thickness of Doublings in Wide Spaces between Fireboxes —

Pitch of Stays at " " " EITHER SIDE OF WING FURNACES

Diar. of Stays Approved  $2"$  Threads per Inch  $6"$

" " " in Boilers " "

Material " STEEL

Are Stays fitted with Nuts outside? YES.

Thickness of Back End Plates at Bottom Approved  $27/32$ '

" " " " " in Boilers "

Pitch of Stays at Wide Spaces between Fireboxes  $14\frac{1}{8}" \times 9\frac{1}{8}"$

Thickness of Doublings in " " —

Thickness of Front End Plates at Bottom Approved  $29/32$ '

" " " " " in Boilers "

No. of Longitudinal Stays in Spaces between Furnaces —

Thickness of End Plates in Steam Space Approved

" " " " " in Boilers

Pitch of Steam Space Stays

Diar. " " " " Approved

" " " " " 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

" " " in Boilers

Material "

Are Stays fitted with Nuts outside?

Thickness of Back End Plates at Bottom Approved

" " " " " in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in

Thickness of Front End Plates at Bottom Approved

" " " " " in Boilers

No. of Longitudinal Stays in Spaces between Furnaces

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Diar. of Stays Approved — Threads per Inch —  
 " in Boilers —  
 Material " —  
 Thickness of Front Tube Plates Approved  $29/32$   
 " " " " in Boilers —  
 Pitch of Stay Tubes at Spaces between Stacks of Tubes  $14/8' \times 9'$   
 Thickness of Doublings in " " " —  
 " Stay Tubes at " " "  $5/16$   
 Are Stay Tubes fitted with Nuts at Front End? BETWEEN NESTS.  
 Thickness of Back Tube Plates Approved  $25/32$   
 " " " in Boilers —  
 Pitch of Stay Tubes in Back Tube Plates  $9" - 1' - 1 1/2" \times 9"$   
 " Plain "  $4 1/2' \times 4 1/2'$   
 Thickness of Stay Tubes  $54 - 1/4" \quad 45 - 5/16"$   
 " Plain "  $228 \text{ WGT } 8$   
 External Diar. of Tubes  $3 1/4'$   
 Material " LAP WELDED WROST IRON  
 Thickness of Furnace Plates Approved  $13/16$   
 " " " in Boilers —  
 Smallest outside Diar. of Furnaces  $3' - 7 3/8'$   
 Length between Tube Plates  $6' - 11 1/2'$   
 Width of Combustion Chambers (Front to Back)  $3' - 0'$   
 Thickness of " " Tops Approved  $24/32$   
 " " " " in Boilers —  
 Pitch of Screwed Stays in C.C. Tops  $8/8' \times 9'$

Diar. of Stays Approved — Threads per Inch —  
 " in Boilers —  
 Material " —  
 Thickness of Front Tube Plates Approved  $29/32$   
 " " " " in Boilers —  
 Pitch of Stay Tubes at Spaces between Stacks of Tubes  $14/8' \times 9'$   
 Thickness of Doublings in " " " —  
 " Stay Tubes at " " "  $5/16$   
 Are Stay Tubes fitted with Nuts at Front End? BETWEEN NESTS.  
 Thickness of Back Tube Plates Approved  $25/32$   
 " " " in Boilers —  
 Pitch of Stay Tubes in Back Tube Plates  $9" - 1' - 1 1/2" \times 9"$   
 " Plain "  $4 1/2' \times 4 1/2'$   
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 Thickness of " " Tops Approved  $24/32$   
 " " " " in Boilers —  
 Pitch of Screwed Stays in C.C. Tops  $8/8' \times 9'$



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Diam. of Screwed Stays Approved

1 5/8"

Threads per Inch

9

In Boilers

Material

STEEL

Thickness of Combustion Chamber Sides Approved

2 1/32"

In Boilers

Pitch of Screwed Stays in C.O. Sides

9 1/4" x 8 1/8"

Diam. " " Approved

1 5/8"

Threads per Inch

9

In Boilers

Material

STEEL

Thickness of Combustion Chamber Backs Approved

1 1/16"

In Boilers

Pitch of Screwed Stays in C.O. Backs

9 1/4" x 9"

Diam. " " Approved

1 3/4"

Threads per Inch

9

In Boilers

Material

STEEL

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

YES.

Thickness of Combustion Chamber Bottoms

2 1/32"

No. of Girders over each Wing Chamber

4

Centre "

2

Depth and Thickness of Girders

2-11" x 9 1/16"

Material of Girders

STEEL

No. of Stays in each

2

No. of Tubes, each Boiler

327

Size of Lower Manholes

16" x 12"

VERTICAL DONKEY BOILERS

22



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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

Are " " fitted with Easing Gear?

Date of Hydraulic Test

Date when Safety Valves set

*RB Type Superheater Co Ltd  
London*

*Smoke box & tubes. Elements in tubes Headers in boxes*

*yes*

*1*

*yes*

*2*

*Superheater has been completely removed.*

*205 lbs*

*31-7-35*

## MAIN STEAM PIPES.



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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 Length

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

4  
SD Steel  
SD Steel  
4"  
1/4.  
Screwed with  
vanishing thread  
4 rivets

## LIST OF PUMPS

BALANCE PUMP 2000 lbs. per hour

SUCKING: 20 ft. line Direct Relief to Sea

DISCHARGE: 20 ft. line Direct Relief to Sea

CIR. PUMP 2000 lbs. per hour  
ENGINE 2000 lbs. per hour

## FEED WATER HEATERS

STEAM SERVICE PUMP 2000 lbs. per hour  
SUCKING: 20 ft. line Direct Relief to Sea  
DISCHARGE: 20 ft. line Direct Relief to Sea

DYNAM. ENGINE 2000 lbs. per hour  
STEAM 2000 lbs. per hour

## FEED WATER FILTERS

STEAM 2000 lbs. per hour  
SUCKING: 20 ft. line Direct Relief to Sea  
DISCHARGE: 20 ft. line Direct Relief to Sea



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## EVAPORATORS.

No.	Type	Tons per Day
Makers		
Working Pressure	Test Pressure	Date of Test
Date of Test of Safety Valves under Steam		

## FEED WATER HEATERS.

No. <i>one</i>	Type <i>Ex Surface.</i>		
Makers <i>J Lewis</i>			
Working Pressure <i>200 in. water</i>	Test Pressure <i>300</i>	Date of Test <i>19-1-35.</i>	

## FEED WATER FILTERS.

No. <i>1</i>	Type <i>Section Filter</i>	Size <i>2 1/2</i>
Makers <i>J Lewis</i>		
Working Pressure	Test Pressure	Date of Test

## LIST OF DONKEY PUMPS.

BALLAST PUMP *Dawson & Downie 7x8x8*  
SUCTIONS:- *Bidge line Direct Bidge Tanks Sea*  
DISCHARGES:- *Overboard Tanks Condenser.*

CIR. PUMP. *Amos & Smith* *6 Bore*  
" ENGINE. *"*

GENERAL SERVICE PUMP. *6x4 1/4 x 6 Dawson & Downie*  
SUCTIONS:- *Ex Tank Boiler & Small Tanks off Tank & Sea*  
DISCHARGES:- *Boiler Ex Tank Deck & Sanitary Tanks*

DYNAMO ENGINE. *Sunderland Forge*

STEERING ENGINE.



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## SPARE GEAR.

No. of Top End Bolts.	4	No. of Bot. End Bolts.	2	No. of Cylinder Cover Studs	26
" Coupling Bolts	6	" Main Bearing Bolts	2	" Valve Chest "	2
" Junk Ring Bolts	6	" Feed Pump Valves	2	" Bilge Pump Valves	2
" H.P. Piston Rings	—	" I.P. Piston Rings	—	" L.P. Piston Rings	—
" " Springs	—	" " Springs	—	" " Springs	—
" Safety Valve "	1	" Fire Bar	1/2 Boiler	" Feed Check Valves	2
" Piston Rods	—	" Connecting Rods	—	" Valve Spindles	—
" Air Pump Rods	—	" Air Pump Buckets	—	" Air Pump Valves	1 set
" Crank Shafts	—	" Crank Pin Bushes	—	" Crosshead Bushes	—
" Propeller Shafts	—	" Propellers	1	" Propeller Blades	—
" Boiler Tubes	3	" Condenser Tubes	3	" Condenser Ferrules	12

## OTHER ARTICLES OF SPARE GEAR:—

assorted Iron  
 1 Escape Valve Spring for each size  
 1 Ecc  
 assorted Bolts & nuts

## REFRIGERATORS



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## REFRIGERATORS.

No. of Machines 2 Capacity of each 36  
 Makers 2  
 Description 2

No. of Steam Cylinders, each Machine 2 No. of Compressors 2 No. of Cranks 2

Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines or Independently 100

System of Refrigeration 1

Insulation 1

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

Spaces? 1

Are all Pipes, Air Trunks, &c., well secured and protected from risk of damage? 1

Are all Bilge, Sounding, and Air Pipes in Insulated Spaces properly insulated? 1

Are Thermometer Tubes so arranged that Water cannot enter and freeze in them? 1

Date of Test under Working Conditions 1

## 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.
Makers of Engines	<u>50</u>	<u>43</u>	<u>1</u>	<u>1</u>
Current Abnormalities	<u>110</u>	<u>110</u>	<u>1</u>	<u>1</u>
Portion of Engines	<u>91</u>	<u>91</u>	<u>1</u>	<u>1</u>
No. of Cylinders in which the trial was provided	<u>4</u>	<u>4</u>	<u>1</u>	<u>1</u>
Particulars of Trials	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
Results	<u>9</u>	<u>5</u>	<u>3</u>	<u>1</u>
Refrigeration	<u>17</u>	<u>9</u>	<u>7</u>	<u>13</u>
2 + 2 ft	<u>21</u>	<u>10</u>	<u>7</u>	<u>13</u>

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

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 over the whole system been tested?

What does the Resistance amount to?

Is the Installation supplied with a Voltmeter?

" " " an Ampere Meter

Date of Trial of complete Installation

Duration of Trial

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



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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. *Imperial*

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

*Robert L. Craig*

Engineer Surveyor to the British Corporation Register  
of Shipping and Aircraft.

## Fees—

## MAIN BOILERS

		£	s.	d.
H.S.	2357	Sq. ft.	16	4 : -
G.S.	60	"	:	:

## DONKEY BOILERS.

H.S.		Sq. ft.	:	:
G.S.		"	:	:
		£	:	:

## ENGINES.

L.P.C.	22.92	Cub. ft.	21	10 : -
		£	:	:
Testing, &c. ...			:	:
		£	:	:
Expenses ...			:	:
Total ...	£		:	:

It is submitted that this Report be approved,

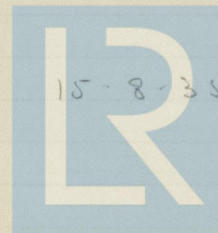
*W. H. King*  
Chief Surveyor  
23 OCT 1935

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

23<sup>rd</sup> October 1935

Fees advised

Fees paid



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Secretary.



## GENERAL CONSTRUCTION

Foot-

and for which the following is a summary of the work done during the year.

1. *Yes* 2. *Yes* 3. *Yes* 4. *Yes* 5. *Yes* 6. *Yes* 7. *Yes* 8. *Yes* 9. *Yes* 10. *Yes*

11. *Yes* 12. *Yes* 13. *Yes* 14. *Yes* 15. *Yes* 16. *Yes* 17. *Yes* 18. *Yes* 19. *Yes* 20. *Yes*

21. *Yes* 22. *Yes* 23. *Yes* 24. *Yes* 25. *Yes* 26. *Yes* 27. *Yes* 28. *Yes* 29. *Yes* 30. *Yes*

31. *Yes* 32. *Yes* 33. *Yes* 34. *Yes* 35. *Yes* 36. *Yes* 37. *Yes* 38. *Yes* 39. *Yes* 40. *Yes*

41. *Yes* 42. *Yes* 43. *Yes* 44. *Yes* 45. *Yes* 46. *Yes* 47. *Yes* 48. *Yes* 49. *Yes* 50. *Yes*

51. *Yes* 52. *Yes* 53. *Yes* 54. *Yes* 55. *Yes* 56. *Yes* 57. *Yes* 58. *Yes* 59. *Yes* 60. *Yes*

61. *Yes* 62. *Yes* 63. *Yes* 64. *Yes* 65. *Yes* 66. *Yes* 67. *Yes* 68. *Yes* 69. *Yes* 70. *Yes*

71. *Yes* 72. *Yes* 73. *Yes* 74. *Yes* 75. *Yes* 76. *Yes* 77. *Yes* 78. *Yes* 79. *Yes* 80. *Yes*

81. *Yes* 82. *Yes* 83. *Yes* 84. *Yes* 85. *Yes* 86. *Yes* 87. *Yes* 88. *Yes* 89. *Yes* 90. *Yes*

91. *Yes* 92. *Yes* 93. *Yes* 94. *Yes* 95. *Yes* 96. *Yes* 97. *Yes* 98. *Yes* 99. *Yes* 100. *Yes*

101. *Yes* 102. *Yes* 103. *Yes* 104. *Yes* 105. *Yes* 106. *Yes* 107. *Yes* 108. *Yes* 109. *Yes* 110. *Yes*

111. *Yes* 112. *Yes* 113. *Yes* 114. *Yes* 115. *Yes* 116. *Yes* 117. *Yes* 118. *Yes* 119. *Yes* 120. *Yes*

121. *Yes* 122. *Yes* 123. *Yes* 124. *Yes* 125. *Yes* 126. *Yes* 127. *Yes* 128. *Yes* 129. *Yes* 130. *Yes*

131. *Yes* 132. *Yes* 133. *Yes* 134. *Yes* 135. *Yes* 136. *Yes* 137. *Yes* 138. *Yes* 139. *Yes* 140. *Yes*

141. *Yes* 142. *Yes* 143. *Yes* 144. *Yes* 145. *Yes* 146. *Yes* 147. *Yes* 148. *Yes* 149. *Yes* 150. *Yes*

151. *Yes* 152. *Yes* 153. *Yes* 154. *Yes* 155. *Yes* 156. *Yes* 157. *Yes* 158. *Yes* 159. *Yes* 160. *Yes*

161. *Yes* 162. *Yes* 163. *Yes* 164. *Yes* 165. *Yes* 166. *Yes* 167. *Yes* 168. *Yes* 169. *Yes* 170. *Yes*

171. *Yes* 172. *Yes* 173. *Yes* 174. *Yes* 175. *Yes* 176. *Yes* 177. *Yes* 178. *Yes* 179. *Yes* 180. *Yes*

181. *Yes* 182. *Yes* 183. *Yes* 184. *Yes* 185. *Yes* 186. *Yes* 187. *Yes* 188. *Yes* 189. *Yes* 190. *Yes*

191. *Yes* 192. *Yes* 193. *Yes* 194. *Yes* 195. *Yes* 196. *Yes* 197. *Yes* 198. *Yes* 199. *Yes* 200. *Yes*

201. *Yes* 202. *Yes* 203. *Yes* 204. *Yes* 205. *Yes* 206. *Yes* 207. *Yes* 208. *Yes* 209. *Yes* 210. *Yes*

211. *Yes* 212. *Yes* 213. *Yes* 214. *Yes* 215. *Yes* 216. *Yes* 217. *Yes* 218. *Yes* 219. *Yes* 220. *Yes*

221. *Yes* 222. *Yes* 223. *Yes* 224. *Yes* 225. *Yes* 226. *Yes* 227. *Yes* 228. *Yes* 229. *Yes* 230. *Yes*

231. *Yes* 232. *Yes* 233. *Yes* 234. *Yes* 235. *Yes* 236. *Yes* 237. *Yes* 238. *Yes* 239. *Yes* 240. *Yes*

241. *Yes* 242. *Yes* 243. *Yes* 244. *Yes* 245. *Yes* 246. *Yes* 247. *Yes* 248. *Yes* 249. *Yes* 250. *Yes*

251. *Yes* 252. *Yes* 253. *Yes* 254. *Yes* 255. *Yes* 256. *Yes* 257. *Yes* 258. *Yes* 259. *Yes* 260. *Yes*



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