

H.O.  
No. 2298

Kincaids 663.  
Hawland & Wolff 872<sup>9</sup>

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. 2288 No. in Register Book 3643

T.S.S. "LOCHNESS" N/W VALMARINA.

Makers of Engines JOHN G. KINCAID & CO LTD

Works No. 663.

Makers of Main Boilers JOHN G. KINCAID & CO LTD

Works No. 663.

Makers of Donkey Boiler —

Works No. —

MACHINERY.



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

Received at Head Office *18<sup>th</sup> September 1929*

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

Official No.

Port of Registry GLASGOW.

Registered Owners DAVID Mc BRAYNE (1928) LTD

Engines Built by JOHN G. KINCAID & CO LTD  
at GREENOCK.

Main Boilers Built by JOHN G. KINCAID & CO LTD  
at GREENOCK.

Donkey " " —

at —

Date of Completion

*9-7-29*

First Visit *31-8-29*

Last Visit *9-7-29*

Total Visits *45*

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## RECIPROCATING ENGINES.

Works No. **663**No. of Sets **2.**Description **TRIPLE EXPANSION****SURFACE CONDENSING, DIRECT ACTING, INVERTED, RECIPROCATING STEAM ENGINES.**No. of Cylinders each Engine **3**No. of Cranks **3**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 VALVES****1st L.P. "****ANDREWS & CAMERON TYPE****2nd L.P. "****L.P. "****DOUBLE PORTED SLIDE VALVES.**

" Valve Gear

**STEPHENSON LINK MOTION.**

" Condensers

**BUILT CYLINDRICAL**Cooling Surface **850** sq. ft. EACH

Diameter of Piston Rods (plain part)

**3 3/4"**Screw part (bottom of thread) **3" DIA. 6 THDS.**

Material

**STEEL**

Diam. of Connecting Rods (smallest part)

**3 1/2"**

Material

**STEEL**

" Crosshead Gudgeons

**4 3/4" DIA.**

Length of Bearing

**6 1/2"**

Material

**STEEL**

No. of Crosshead Bolts (each)

**2**

Diam. over Thrd.

**2 1/4"**

Thrds. per inch

**6**

Material

**STEEL**

" Crank Pin

**2**

Diam.

**2 1/4"**

Thrds. per inch

**6**

Material

**STEEL**

" Main Bearings

**SIX**

Lengths

**8 1/2"**

" Bolts in each

**2**

Diam. over Thread

**2**

Threads per inch

**6**

Material

**STEEL**

" Holding Down Bolts, each Engine

**76**

Diam.

**1"**

No. of Metal Chocks

**76**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? **YES**

If not, how are they fitted?

Connecting Rods, Forged by **JOHN G. KINCAID & CO LTD**

Piston

Crossheads,

Connecting Rods, Finished by

Piston

Crossheads,

Date of Harbour Trial

**3. 7. 29.**

" Trial Trip

**9. 7. 29**

Trials run at

**FIRTH OF CLYDE.**Were the Engines tested to full power under Sea-going conditions? **YES.**

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

**1514**

Revs. per min.

**148**

Pressure in 1st L.P. Receiver,

**50**

lbs., 2nd L.P.,

lbs., L.P.,

**7**

lbs., Vacuum,

**27 1/4** ins.

Speed on Trial

**13.953**

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

data:—

Builders' estimated I.H.P.

**1450**

Revs. per min.

**135.**

Estimated Speed



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## TURBINE ENGINES.

Works No. — Type of Turbines —

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

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

Is Single or Double Reduction Gear employed? —

Diam. of 1st Reduction Pinion — } 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. —

If the Conditions on Trial were such that the power records were not obtained give the following estimates:  
 " " 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 Turbine-Generator Sets —

Type of Turbine employed —

Description of Generator —

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 H.P. Turbines at Full Power — S.H.P. —

If the Conditions on Trial were such that the power records were not obtained give the following estimates:  
 " " 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 —



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## TURBO-ELECTRIC PROPELLING MACHINERY.

No. of Turbo-Generating Sets — Capacity of each —

Type of Turbines employed —

Description of Generators —

No. of Motors driving Propeller Shafting —

Are the Propeller Shafts driven direct by the Motors or through Gearing? —

Is Single or Double Reduction Gear employed? —

Description of Motors —

Diam. of 1st Reduction Pinion	—	}	Width	—	Pitch of Teeth	—
" 1st " Wheel	—					

Estimated Pressure per lineal inch —

Diam. of 2nd Reduction Pinion	—	}	Width	—	Pitch of Teeth	—
" 2nd " Wheel	—					

Estimated Pressure per lineal inch —

Revs. per min. of Generators at Full Power —

" " Motors " —

" " 1st Reduction Shaft —

" " 2nd " —

" " Propellers at Full Power —

Total Shaft Horse Power —

Date of Harbour Trial —

" Trial Trip —

Trials run at —

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

Makers of Turbines —

" Generators —

" Motors —

" Reduction Gear —

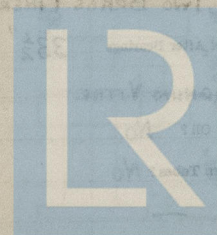
Turbine Spindles forged by —

" Wheels forged or cast by —

Reduction Gear Shafts forged by —

" Wheels forged or cast by —

## DESCRIPTION OF INSTALLATION.



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## SHAFTING.

Are the Crank Shafts Built or Solid? **BUILT.**No. of Lengths in each **ONE** Angle of Cranks **120°.**Diar. by Rule **7.654"** Actual **7 3/4"** In Way of Webs **8"**" of Crank Pins **7 3/4"** Length between Webs **8 1/4"**Greatest Width of Crank Webs **14 3/4"** Thickness **4 13/16"**

Least " " " " " " " "

Diar. of Keys in Crank Webs **1"** Length **1 3/4"**

" Dowels in Crank Pins — Length — Screwed or Plain —

No. of Bolts each Coupling **6** Diar. at Mid Length **1 7/8"** Diar. of Pitch Circle **12"**Greatest Distance from Edge of Main Bearing to Crank Web **1 1/4"**

Type of Thrust Blocks

**MICHELL**

No. " Rings

**ONE**

Diar. of Thrust Shafts at bottom of Collars

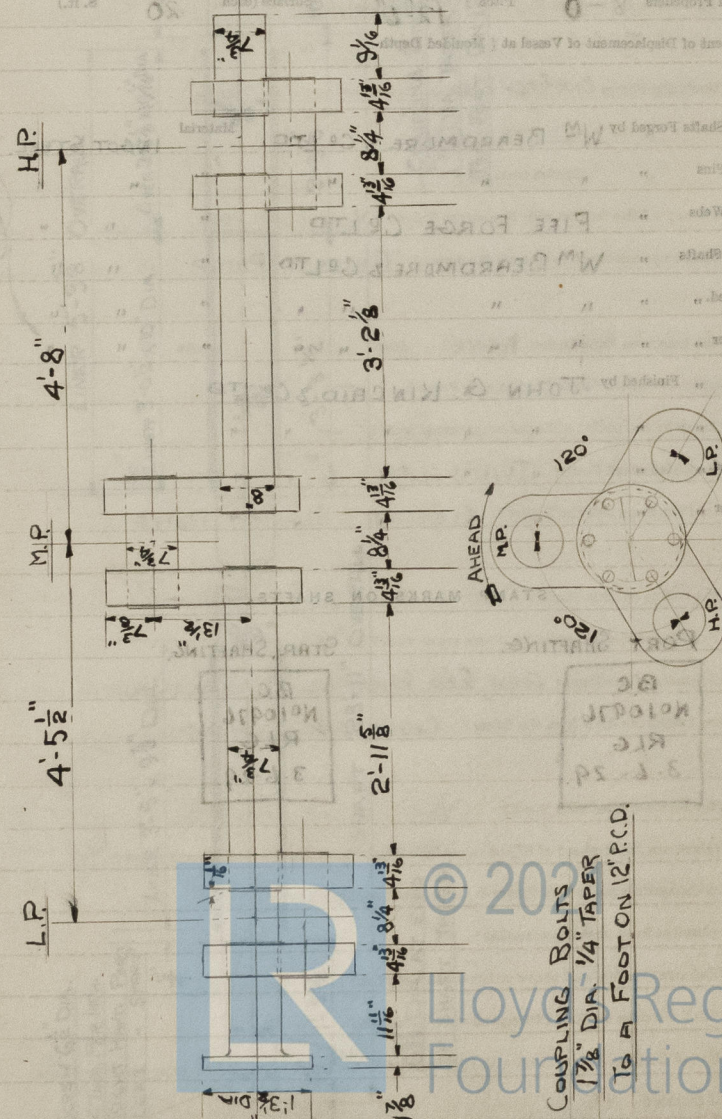
**7 3/4"**No. of Collars **ONE**

" " Forward Coupling

**7 3/4"**At Aft Coupling **7 3/4"**Diar. of Intermediate Shafting by Rule **7.289"** Actual **7 3/8"** No. of LengthsNo. of Bolts, each Coupling **6** Diar. at Mid Length **1 7/8"** Diar. of Pitch Circle **12"**Diar. of Propeller Shafts by Rule **8.309** Actual **8 3/8"** At Couplings **7 3/4"**Are Propeller Shafts fitted with Continuous Brass Liners? **TWO BRASS LINERS.**Diar. over Liners **9 7/8" & 10"** Length of After Bearings **33 1/2"**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.



LOOKING FORWARD STARBOARD ENG.  
PORT SHAFT TO OPPOSITE HAND







## PUMPS, ETC.

No. of Air Pumps **ONE EACH ENG.** Diar. **13"** Stroke **14"**

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

No. of Circulating Pumps **ONE EACH ENG.** Diar. **—** Stroke **—**

Type of **" CENTRIFUGAL**

Diar. of **" Suction from Sea 7"**

Has each Pump a Bilge Suction with Non-return Valve? **YES** Diar. **5"**

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

No. of Feed Pumps on Main Engine **NONE** 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 **TWO** Diar. **6"** Stroke **18"**

What other Pumps can feed the Boilers? **GENERAL SERVICE PUMP.**

No. of Bilge Pumps on Main Engine **TWO** Diar. **2½"** Stroke **14"**

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

No. of Independent Bilge Pumps **GEN. SER. PUMP & BALLAST PUMP**

What other Pumps can draw from the Bilges? **CIRCULATING PUMPS.**

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? **YES.**

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

No. of Boilers **TWO** Type **CYLINDRICAL** Material **STEEL** Pressure **150 LBS.**

Single or Double-ended **SINGLE ENDED**

No. of Furnaces in each **THREE**

Type of Furnaces **DELTA**

Date when first approved **18.2.24**

Approved Working Pressure **150 LBS.**

Hydraulic Test Pressure **180 LBS.**

Date of Hydraulic Test **14.8.24**

When Safety Valves set **2.5.24**

Pressure at which Valves were set **150 LBS.**

Date of Accommodation Test **5.7.24**

Maximum Pressure under Accommodation Test **150 LBS.**

Specimen of Plate **SCOTCH IRON & STEEL CO. LTD.**

Can Boilers be worked separately? **YES.**

Number of Plates **SCOTCH IRON & STEEL CO. LTD.**

Place of Manufacture **NEW RIVER GOLF & HAT FACTORY**

Pressure **MARSHALL & CO.**

Approved Internal Dia. of Boilers **18.10.24**

Length **11.2.24**

Spigot Hole of Leading Flange **18.10.24**

Date **18.10.24**

No. of Safety Valves **THREE**

Pressure **150 LBS.**

No. of Pressure Coils **ONE**

Pressure **150 LBS.**

Pressure **150 LBS.**

Pressure **150 LBS.**

Pressure **150 LBS.**

Pressure **150 LBS.**

Pressure **150 LBS.**

Pressure **150 LBS.**

Pressure **150 LBS.**

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Pressure **150 LBS.**

Pressure **150 LBS.**

Pressure **150 LBS.**



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## BOILERS

Works No. 663

No. of Boilers TWO Type CYLINDRICAL, MULTITUBULAR, RETURN TUBE, MARINE

Single or Double-ended SINGLE END FIRED

No. of Furnaces in each THREE

Type of Furnaces DEIGHTON.

Date when Plan approved 18. 2. 29.

Approved Working Pressure 200 lbs.

Hydraulic Test Pressure 350 lbs.

Date of Hydraulic Test 14. 5. 29.

" when Safety Valves set 2. 7. 29.

Pressure at which Valves were set 200 lbs.

Date of Accumulation Test 2. 7. 29.

Maximum Pressure under Accumulation Test 207 lbs.

System of Draught FORCED DRAUGHT.

Can Boilers be worked separately? YES

Makers of Plates D. COLVILLE &amp; SONS. LTD.

" Stay Bars SCOTTISH IRON &amp; STEEL CO. LTD

" Rivets - N.W. RIVET BOLT &amp; NUT FACTORY.

" Furnaces MARSHALL &amp; CO

Greatest Internal Diam. of Boilers 12'-10 27/32"

" " Length " 11'-5 5/32"

Square Feet of Heating Surface each Boiler 1809

" " Grate " "

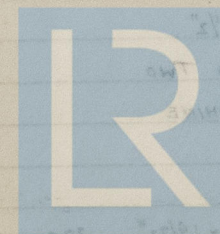
No. of Safety Valves each Boiler 2 Rule Diam. 2.85" Actual 3"

Are the Safety Valves fitted with Easing Gear? YES.

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

" Test Cocks " THREE " Salinometer Cocks ONE.

B.C. TEST.  
 No. 5149.  
 T.P. 350 lbs.  
 W.P. 200 lbs.  
 R.L.G.  
 14. 5. 29.



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Are the Water Gauges fitted direct to the Boiler Shells or mounted on Pillars? **ON PILLARS.**

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

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

Are Blow-off Cocks or Valves fitted on Boiler Shells? **VALVES ON BOILER ENDS**

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

„ Plates in each Strake **TWO.**

Thickness of Shell Plates Approved **1 5/32"**

„ „ 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? **EQUAL.**

Thickness of outside Butt Straps **7/8"**

„ inside **1"**

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

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

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

Diar. of Rivet Holes **1 5/32"** Pitch **7/8"**

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

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

Diar. of Rivet Holes **-** Pitch **-**

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

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

Diar. of Rivet Holes **1 3/16"** Pitch **3 1/2"**

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

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

Diar. of Rivet Holes **1 3/16"** Pitch **3 1/2"**

Size of Manholes in Shell **16 1/2" x 20 1/2"**

Dimensions of Compensating Rings **2 1/11" x 2 1/7" x 1 9/32"** **38 RIVETS 1 5/16" HOLES.**



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

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

Pitch of Steam Space Stays  $19" \times 18\frac{1}{2}"$

Diar. " " " " Approved  $3\frac{1}{8}"$  Threads per Inch 6

" " " " " in Boilers " " "

Material of " " " STEEL.

How are Stays Secured? THRO PLATES NUT INSIDE & OUTSIDE

Diar. and Thickness of Loose Washers on End Plates  $1\frac{1}{4}" \times 7\frac{3}{4}"$

" " 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 " " " "  $14" \times 9"$

Diar. of Stays Approved  $17/8"$  Threads per Inch 9

" " 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 —

Thickness of Doublings in " " —

Thickness of Front End Plates at Bottom Approved  $7/8"$

" " " " " in Boilers "

No. of Longitudinal Stays in Spaces between Furnaces —



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Diar. of Screwed Stays Approved  $1\frac{5}{8}$ " Threads per Inch 9

" " " In Boilers " "

Material " " STEEL.

Thickness of Combustion Chamber Sides Approved  $2\frac{1}{32}$ "

" " " " in Boilers "

Pitch of Screwed Stays in C.O. Sides  $7\frac{3}{4}$ " x  $8\frac{5}{8}$ "

Diar. " " Approved  $1\frac{5}{8}$ " Threads per Inch 9

" " " In Boilers " "

Material " " STEEL

Thickness of Combustion Chamber Backs Approved  $2\frac{1}{32}$ "

" " " " in Boilers "

Pitch of Screwed Stays in C.O. Backs 9" x 8"

Diar. " " Approved  $1\frac{5}{8}$ " Threads per Inch 9

" " " In Boilers " "

Material " " STEEL.

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

Thickness of Combustion Chamber Bottoms  $3\frac{1}{4}$ "

No. of Girders over each Wing Chamber THREE

" " " Centre " TWO.

Depth and Thickness of Girders  $8\frac{1}{2}$ " x  $7\frac{7}{8}$  TWO PLATES.

Material of Girders STEEL

No. of Stays in each THREE.

Tubes, each Boiler 268 TOTAL. 188 PLAIN. 80 STAY.

Lower Manholes 16" x 12 McNEIL DOOR

# VERTICAL DONKEY BOILERS

No. of Boilers	Type	Height	Greatest In. Diam.	Height of Boiler Crown above Fire Grate	Is Boiler Crown Flat or Dishd?	Internal Radius of Dishd Ends	Description of Seams in Boiler Crown	Diam. of Water Tubes	Height of Firebox Crown above Fire Grate	Is Firebox Crown Flat or Dishd?	Internal Radius of Dishd Crown	No. of Crown Stays	Diam.	Material	Thickness of Plates	External Diam. of Firebox at Top	No. of Water Tubes	Material of Water Tubes	Size of Manhole in Shell	Thickness of Combustion Box	Heating Surface, each Boiler	Grate Surface

## SUPERHEATERS



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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 Boilers	Type	Height	Material	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
2	STEEL	12372	STEEL	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222
4	STEEL	12372	STEEL	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222
2	STEEL	12372	STEEL	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222	22222



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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.	ONE	Type	MULTIFLOW SURFACE FEED HEATER.
Makers	G & J. WEIR LTD.	LO & H.S.	
Working Pressure	200 lbs	Test Pressure	500 lbs. Date of Test 5-6-29

## FEED WATER FILTERS.

No.	ONE	Type	SUCTION FILTER.	Size	3" BORE
Makers	JOHN G. KINCAID & CO LTD				
Working Pressure	ATMOS.	Test Pressure		Date of Test	

## LIST OF DONKEY PUMPS.

PURPOSE	MAKERS	N <sup>o</sup>	SIZE
CENT. CIR. PUMPS(2)	DRYSDALE	20817-8	7"
SUCTIONS	SEA & BILGE INJECTIONS,	DISCHARGES	CONDENSERS.
ENGINE (DYNAMO)	MATHEW PAUL.		

BALLAST PUMP.	T. LAMONT	14826	7" x 8" x 8"
SUCTIONS:-	TANKS, DIRECT BILGE, SEA, BILGE MAIN.		
DISCHARGES:-	TANKS, OVERBOARD. CONDENSER.		

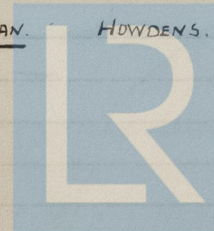
GENERAL SERVICE	T. LAMONT	14819.	8" x 6" x 8"
SUCTIONS:-	BOILERS, CONDENSER, FLOAT TANK, HOTWELL, SEA, BILGES. FILTER.		
DISCHARGES:-	OVERBOARD, BOILERS DECK & SANITARY.		

MAIN FEED INDER(2)	G. & J. WEIR LTD.	91758-9	6" x 8 1/2" x 18"
SUCTIONS:-	FRESHWATER TANKS, CONDENSER, FLOAT TANK, HOTWELL, SEA, BOILERS.		
DISCHARGES:-	AUX & MAIN FEED, FEED HEATER, DECK, SANITARY.		

FRESH WATER	CARRUTHERS.	4 1/2" x 3" x 4"
SUCTIONS:-	FW. TANKS.	
DISCHARGE	BOILERS. & FILTER.	

OIL FUEL UNIT	CLYDE OIL FUEL CO	N <sup>o</sup> 381
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FORCED DRAUGHT FAN.	HOWDEN'S.
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OTHER ARTICLES OF SPARE GEAR:—

1 PAIR BOTTOM END BUSHES  
1 " TOP " "  
1 CIRCULATING PUMP IMPELLER  
6 HOLDING DOWN BOLTS & NUTS.  
1 ESCAPE VALVE SPRING (EACH SIZE)



## 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.
Machinery Space	—	—	—	—
Capacity	—	—	—	—
Current Alternating or Continuous	—	—	—	—
Kind of Circulating Water System	—	—	—	—
Position of Machinery	—	—	—	—
Main Safety Valve	—	—	—	—
No. of Cranks to which Engines are coupled on this Trial	—	—	—	—
Particulars of these Cranks	—	—	—	—
Speed	—	—	—	—
Pressure	—	—	—	—
Temperature	—	—	—	—
Water Temp. 3 Surface	65	13	7/30	10/1
Water Deck	77	30	1/00	10/1
Water 2. Bottom	111	17.5	7/30	10/1
Immersion	24	9	7/30	10/1
Water 1. Bottom	—	—	7/30	10/1

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 **NONE**

Are Out-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits

**YES**

On Aux. " " each Auxiliary Circuit

**YES**

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. **3/02g** S.W.G., Largest, No. **19/072** S.W.G.

How are Conductors in Engine and Boiler Spaces protected? **HR CLASS CABLE ON PLATING.**

" " 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

**WT GLANDS BY BUSH HOLES**

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? **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?

**2,000,000 Ohms.**

Is the Installation supplied with a Voltmeter? **YES**

" " " an Ampere Meter **YES**

Date of Trial of complete Installation **9.7.29** Duration of Trial **6 HOURS**

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

*Robert H. Craig*



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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**, as all joints in accessible positions have been made in duplicate or triple.

If not, give details of the points of difference, and state when these were sanctioned by the Chief

Surveyor. **—** as the Engineer, Main and Branch Cables, so placed that the Company —

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? **5,000,000 ohms**

Is the Installation supplied with a Voltmeter? **Yes**

as Ampere Meter **Yes**

Date of Trial of complete Installation **9.7.22** Duration of Trial **4 hours**

Have all the requirements of Section 43 been satisfactorily carried out? **Yes**

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. **"LOCHNESS"**

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

*Robert H. Greig,*

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

## Fees—

## MAIN BOILERS.

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

## DONKEY BOILERS.

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

## ENGINES.

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

It is submitted that this Report be approved,

*Joe Barr* for Chief Surveyor.

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

*18th September 1922*

Fees advised

Fees paid



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