

Rpt. 4a.

## REPORT ON MACHINERY

No. 41825

Date of writing Report 24/3/22

When handed in at Local Office 25/3/22

Received at London Office 28/3/22

No. in Survey held at 22

Port of Glasgow

Reg. Book.

on the

T/S

Glasgow

Date, First Survey 8.3.1920

Last Survey 23.3.1922

(Number of Visits 1/5)

Master

Built at

Glasgow

By whom built

Barclay Curle &amp; Co. Ltd. (1888)

Tons

Gross 8965

Net 5453

Engines made at

Glasgow

By whom made

Barclay Curle &amp; Co. Ltd. (1888)

When built 1922

Boilers made at

Glasgow

By whom made

Barclay Curle &amp; Co. Ltd. (1888)

when made 1922

Horse Power 1008

Owners

British India Co.

when made 1922

Shaft Horse Power at Full Power 4320

Is Refrigerating Machinery fitted for cargo purposes

No

Port belonging to

Glasgow

Is Electric Light fitted

Yes

## TURBINE ENGINES, &amp;c.—Description of Engines

6 Turbine engines 2 shafts  
 Diameter of Rotor Shaft Journals, H.P. 3" 9/32" L.P. 4" 1/2"  
 Diameter of Journals 4 1/4" 9/32" 2 1/2" 1/2"  
 Diameter of Wheel Shaft 13" 1/2"  
 Distance between Centres of Bearings 25 1/2" 6 1/2"  
 Diameter of Pinion Shaft 1 1/2" 1/2"  
 Diameter of Pitch Circle 70 7/10" 10 7/10" 55 5/16"  
 Width of Face 31"  
 Diameter of Thrust Shaft under Collars 13 1/8"  
 Diameter of Pitch Circle of Wheel 80 3/4"  
 No. of Screw Shafts 3  
 Diameter of same as per rule 1 1/4"  
 Diameter of Tunnel Shaft as per rule 1 1/2"  
 No. of Blades 3  
 State whether Moveable Yes  
 Diameter of Propeller 16 3/4"  
 Pitch of Propeller 18 3/4"  
 Thickness at Bottom of Groove, H.P. L.P. Astern  
 Total Surface 136 1/4"  
 Diameter of Rotor Drum, H.P. L.P. Astern  
 Revs. per Minute at Full Power, Turbine 4320 Propeller 86

## PARTICULARS OF BLADING.

Brown Curtis Blading

H. P.				L. P.			ASTERN.											
HEIGHT OF BLADES.				DIAMETER AT TIP.			NO. OF ROWS.			HEIGHT OF BLADES.			DIAMETER AT TIP.			NO. OF ROWS.		
1ST EXPANSION	.....																	
2ND	"	.....																
3RD	"	.....																
4TH	"	.....																
5TH	"	.....																
6TH	"	.....																
7TH	"	.....																
8TH	"	.....																

No. and size of Feed pumps 3 2 WEIRS 10 x 13 1/2

No. and size of Feed pumps 3 2 WEIRS 10 x 13 1/2 x 21 5 1/2 x 7 1/2 x 15  
 No. and size of Bilge pumps 2 7 x 8 x 12 12 x 8 x 10 4 1/2 x 10 x 7 1/2 x 21 9 x 10 x 11  
 No. and size of Bilge suction in Engine Room 2 3 1/2 3 1/2 2 3 1/2  
 In Holds, &c. all holds 2 3 1/2 Tunnel Well 1 2 1/2

No. of Bilge Injections 2 sizes 10 Connected to circulating pump pump Is a separate Donkey Suction fitted in Engine Room & size 5"  
 Are all the bilge suction pipes fitted with roses Yes  
 Are all connections with the sea direct on the skin of the ship Yes  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes  
 What pipes are carried through the bunkers Bilge Suction  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes  
 Is the Screw Shaft Tunnel watertight Yes  
 Is it fitted with a watertight door Yes worked from U.S.R. Platform

## BOILERS, &amp;c.—(Letter for record)

102 HEATING SURFACE & 4 MAIN ONE CUM BOILERS 13948 6 Manufacturers of Steel  
 Total Heating Surface of Boilers 12420 Is Forced Draft fitted Yes  
 Working Pressure 215 Tested by hydraulic pressure to 375 No. and Description of Boilers 4 Single Ended  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 76-16 76-16 No. of Certificate 15850 15868  
 each boiler Double Spring Area of each valve 1104 1104 No. and Description of Safety Valves to  
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" Pressure to which they are adjusted 220  
 Thickness 13/64 Range of tensile strength 31-35 5000 Mean dia. of boilers 16-6 Length 12-0 Are they fitted with easing gear Yes  
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 19/16 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.E.L.  
 Per centages of strength of longitudinal joint rivets 91.1 plates 85.16 Working pressure of shell by rules 220 width of butt straps 22 3/4"  
 Size of compensating ring 3-2 1/2 x 3-4 x 13/64 No. and Description of Furnaces in each Boiler 4 Corrugated Material S Outside diameter 3-9 1/4"  
 Length of plain part top Thickness of plates crown 21/32 Description of longitudinal joint weld No. of strengthening rings  
 bottom Thickness of plates bottom 21/32  
 Working pressure of furnace by the rules 235 Combustion chamber plates: Material S Thickness: Sides 21/32 Back 21/32 Top 21/32 Bottom 27/32  
 Pitch of stays to ditto: Sides 8 1/4 x 8 1/8 Back 8 x 8 Top 8 1/4 x 8 1/8 If stays are fitted with nuts or riveted heads DN Working pressure by rules 226 End plates in steam space  
 Material of stays S Area supported by each stay 67 1/2 Working pressure by rules 218 Material of stays S  
 Material S Thickness 13/16 Pitch of stays 1/32 x 1/32 How are stays secured DN Working pressure by rules 218 Material of Front plates at bottom S  
 Diameter of tubes 2 3/4 Pitch of tubes 4 x 37/8 Material of tube plates S Thickness: Front 31/32 Back 13/16 Mean pitch of stays 8 7/8  
 Pitch across wide water spaces 133/4 Working pressures by rules 218 Thickness: Front 31/32 Back 13/16  
 thickness of girder at centre 10 x 23/32 (2) Length as per rule 2-10 1/32 Distance apart 8 1/8 Girders to Chamber tops: Material S Depth and  
 Working pressure by rules 217 Steam dome: description of joint to shell No. and pitch of stays in each 3 at 8 1/4  
 Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets  
 Working pressure of shell by rules Crown plates: Thickness How stayed



SUPERHEATER. Type *Superheater Corporation* Date of Approval of Plan *see Ryl attached* Tested by Hydraulic Pressure to *645*  
Date of Test *see Ryl attached* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *Yes*  
Diameter of Safety Valve *2"* Pressure to which each is adjusted *220* Is Easing Gear fitted *Yes*

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *Yes*

SPARE GEAR. State the articles supplied: *2 sets of bolts for each pair of Rotor bearing, 2 sets of bolts for Main Gear Wheel bearing, 2 sets of bolts for Pinion bearing, 1 set of Coupling bolts of each size used, 1/20 of total number of bolts used for each gear connection, 1/20 of total number for each Trailing Connection, 2 Thermometers for Oil Circulating system, 1 set of bearing bushes for one Gear Shaft, 1 set of bearing bushes for Rotor, 1 set of bearing bushes for Pinion shaft, one half set of Packing Rings for each gland of Rotor shaft, 1/2 the number of Springs fitted, 2 Thrust Washers, Trailing Thrust adjusting bushes with Rings complete, 1 set of Turners for adjusting Block of differential Rods, 1 set of End pump valves, 1 set of Bilge pump valves, 1 set of valves for Lubricating Oil Pump, Trailing Rod for fuel oil pump, 1 escape valve spring of each type fitted*  
The foregoing is a correct description, a quantity of *am or f d lock nuts studs & bolts*  
Bars & plates of *iron or mild steel*

FOR BARCLAY, CURLE & CO. LTD.

Manufacturer.

*John Alexander*

Manager

Dates of Survey while building: During progress of work in shops - *1920 Mar 8-29, 30 Apr 7-15, 17-22, 23 May 12-18, Jun 1, 8, Sep 15, Oct 5-12, 15-28, Nov 2, 15, 23, 25-26, Dec 7, 11, 22 (1921) Jan 11, 14, 18, 28, Feb 28-17, 20-18, 21, 23, 24, 25, Mar 2, 4, 7, 8, 18, 22, 24 Apr 5, 14, 15, 17, 26, 29 May 2, 3, 4, 16, 17, 19, 20, 23, 25, 30, 31 Jun 7, 8, 9, 16, 17, 21, 22, 27, 29, 30 July 4, 6, 28-29, Aug 8, 9, 15, 18, 24 Sep 5, 7, 8, 12, 14, 19, 27, 28 Oct 21-28, Nov 4, 11, 17, 22, 24, 28 Dec 1, 5, 8, 12, 19, 21, 29 (1922) Jan 11, 12, 18, 23, 24, Feb 3, 13, Mar 2, 9, 15, 23*  
During erection on board vessel - *115*  
Total No. of visits

Is the approved plan of main boiler forwarded herewith? *forwarded herewith*

Dates of Examination of principal parts - Casings *31. 5. 21* Rotors *27. 6. 21* Blading *27. 6. 21* Gearing *8. 9. 21*  
Rotor shaft *30. 6. 21* Thrust shaft *8. 9. 21* Tunnel shafts *19. 9. 21* Screw shaft *5. 9. 21* Propeller *5. 9. 21*  
Stern tube *5. 9. 21* Steam pipes tested *6/4/21 to 14/2/22* Engine and boiler seatings *12. 13. 21* Engines holding down bolts *18. 1. 22*  
Completion of pumping arrangements *15. 3. 22* Boilers fired *3. 2. 22* Engines tried under steam *23. 3. 22*  
Main boiler safety valves adjusted *2. 3. 21* Thickness of adjusting washers *S 3/8 1/2 P 3/8 5/16 S 5/16 13/32 C 3/8 1/4 P 3/8 5/16*  
Material and tensile strength of Rotor shaft *S 34-38* Identification Mark on Do. *7840 7889 1900 Lloyd's*  
Material and tensile strength of Pinion shaft *S 40-43* Identification Mark on Do. *8834/58340/1 Lloyd's 588 WGM*  
Material of Wheel shaft *S* Identification Mark on Do. *LLOYDS* Material of Thrust shaft *S* Identification Mark on Do. *LLOYDS*  
Material of Tunnel shafts *S* Identification Marks on Do. *WGM 588* Material of Screw shafts *S* Identification Marks on Do. *WGM 588*  
Material of Steam Pipes *iron* Test pressure *645*

Is an installation fitted for burning oil fuel? *Yes* Is the flash point of the oil to be used over 150°F? *Yes*  
Have the requirements of Section 49 of the Rules been complied with? *Yes*  
Is this machinery a duplicate of a previous case? *Yes* If so, state name of vessel *5/5 Maduria 3000 H.P. 41562 1/2 Mantola 3000 H.P.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *These engines & boilers have been built under Special Survey in accordance with the approved plans & the workmanship & material are of good quality. They have now been securely fitted on board & fired under steam & found satisfactory. The machinery is eligible in my opinion for the record of LMC 3 22 fitted for oil fuel 3 22. F.P. above 150°F.*  
*Note: Superheaters fitted to 3 after main boiler only.*

It is submitted that this vessel is eligible for THE RECORD. *F.L.M.C. - 3. 22. F.D. C.L. 1008 N.H.P.*

*Fitted for oil fuel, 3. 22, F.P. above 150°F.*

*4 steam turbines geared to 2 screw shafts.*

The amount of Entry Fee ... £ *6* : - :  
Special ... £ *125* : *4* :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, *27.3.22.*  
When received, *26/4/22.*

MACHINERY CERT  
WRITTEN  
27/4/22  
(dated 29/3/22)

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW 28 MAR 1922*

Assigned *+ LMC 3 22. 7D.*

*Fitted for oil fuel 3, 22 F.P. above 150°F.*



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