

REPORT ON MACHINERY.

No. 41660

Received at London Office JAN. 18 1922

Date of writing Report 1.1.22 When handed in at Local Office 16.1.22 Port of Glasgow
 No. in Survey held at Clydebank Date, First Survey 24.3.1921 Last Survey 6.12.1921
 Reg. Book. on the _____ (Number of Visits 17)
 Master _____ Built at _____ By whom built Furness S.B.C. (1919) When built _____
 Engines made at Clydebank By whom made John Brown & Co. L. 50 20 when made 1921
 Boilers made at _____ By whom made _____ when made _____
 Registered Horse Power _____ Owners _____ Port belonging to _____
 Shaft Horse Power at Full Power 5000 Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

TURBINE ENGINES, &c.—Description of Engines Brown Curtis S.R. Guard Luban No. of Turbines 2
 Diameter of Rotor Shaft Journals, H.P. 7 1/2 x 1 1/4 L.P. 10 1/2 x 1 1/8 Diameter of Pinion Shaft H.P. & L.P. 9" with 3" hole
 Diameter of Journals 9" with 3" hole Distance between Centres of Bearings 5' 1 1/4" Diameter of Pitch Circle 10.012
 Diameter of Wheel Shaft 17" x 2 1/2" Distance between Centres of Bearings 7' 1 1/4" Diameter of Pitch Circle of Wheel 144.21
 Width of Face 50 Diameter of Thrust Shaft under Collars _____ Diameter of Tunnel Shaft _____ as per rule _____ as fitted _____
 No. of Screw Shafts _____ Diameter of same _____ as per rule _____ as fitted _____ Diameter of Propeller _____ Pitch of Propeller _____
 No. of Blades _____ State whether Moveable _____ Total Surface _____ Diameter of Rotor Drum, H.P. _____ L.P. _____ Astern _____
 Thickness at Bottom of Groove, H.P. _____ L.P. _____ Astern _____ Revs. per Minute at Full Power, Turbine 1270 Propeller 88

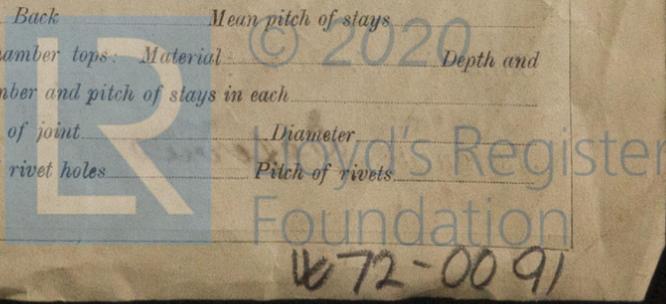
PARTICULARS OF BLADING.

	H. P.			L. P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	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 _____
 No. and size of Bilge pumps _____
 No. and size of Bilge suction in Engine Room _____
 In Holds, &c. _____

No. of Bilge Injections _____ sizes _____ Connected to condenser, or to circulating pump _____ Is a separate Donkey Suction fitted in Engine Room & size _____
 Are all the bilge suction pipes fitted with roses _____ Are the roses in Engine room always accessible _____
 Are all connections with the sea direct on the skin of the ship _____ Are they Valves or Cocks _____
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates _____ Are the Discharge Pipes above or below the deep water line _____
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel _____ Are the Blow Off Cocks fitted with a spigot and brass covering plate _____
 What pipes are carried through the bunkers _____ How are they protected _____
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times _____
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges _____
 Is the Screw Shaft Tunnel watertight _____ Is it fitted with a watertight door _____ worked from _____

BOILERS, &c.—(Letter for record _____) Manufacturers of Steel _____
 Total Heating Surface of Boilers _____ Is Forced Draft fitted _____ No. and Description of Boilers _____
 Working Pressure _____ Tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____
 Can each boiler be worked separately _____ Area of fire grate in each boiler _____ No. and Description of Safety Valves to each boiler _____
 Area of each valve _____ Pressure to which they are adjusted _____ Are they fitted with easing gear _____
 Smallest distance between boilers or uptakes and bunkers or woodwork _____ Mean dia. of boilers _____ Length _____ Material of shell plates _____
 Thickness _____ Range of tensile strength _____ Are the shell plates welded or flanged _____ Descrip. of riveting: cir. seams _____
 long. seams _____ Diameter of rivet holes in long seams _____ Pitch of rivets _____ Lap of plates or width of butt straps _____
 Per centages of strength of longitudinal joint _____ rivets _____ Working pressure of shell by rules _____ Size of manhole in shell _____ plates _____
 Size of compensating ring _____ No. and Description of Furnaces in each Boiler _____ Material _____ Outside diameter _____
 Length of plain part _____ top _____ crown _____ Description of longitudinal joint _____ No. of strengthening rings _____ bottom _____ bottom _____
 Working pressure of furnace by the rules _____ Combustion chamber plates: Material _____ Thickness: Sides _____ Back _____ Top _____ Bottom _____
 Pitch of stays to ditto: Sides _____ Back _____ Top _____ If stays are fitted with nuts or riveted heads _____ Working pressure by rules _____
 Material of stays _____ Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ End plates in steam space _____
 Material _____ Thickness _____ Pitch of stays _____ How are stays secured _____ Working pressure by rules _____ Material of stays _____
 Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ Material of Front plates at bottom _____
 Thickness _____ Material of Lower back plate _____ Thickness _____ Greatest pitch of stays _____ Working pressure of plate by rules _____
 Diameter of tubes _____ Pitch of tubes _____ Material of tube plates _____ Thickness: Front _____ Back _____ Mean pitch of stays _____
 Pitch across wide water spaces _____ Working pressures by rules _____ Girders to Chamber tops: Material _____ Depth and thickness of girder at centre _____ Length as per rule _____ Distance apart _____ Number and pitch of stays in each _____
 Working pressure by rules _____ Steam dome: description of joint to shell _____ % of strength of joint _____ Diameter _____
 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 Date of Approval of Plan Tested by Hydraulic Pressure to
 Date of Test. Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
 Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted.

IS A DONKEY BOILER FITTED? If so, is a report now forwarded?

SPARE GEAR. State the articles supplied: *Being by John Brown & Co., 26 bolts nuts for H.P. & L.P. turbine casing, 20 bolts & studs with nuts for H.P. & L.P. bearing & thrust covers, 2 each H.P. & L.P. bearing bushes, 1 set (9) H.P. & L.P. gland carbon packing rings, 1/2 set (12) H.P. & L.P. gland springs, 1 set (2) H.P. & L.P. diaphragm springs, 1 set H.P. & L.P. diaphragm brass serrated packing, Springs for H.P. & L.P. diaphragms (48) 1/2 set; 1 set (2) main gear wheel bearing bushes, 1/2 set each, after central forward bearing bushes for pinions, H.P. & L.P. turbine thrust liners (3 of each), 1 set (12) H.P. & L.P. turbine thrust pads, 10 spanners.*

The foregoing is a correct description, **John Brown & Company, Limited.**

Manufacturer. *A. M. McBeand*
 Clydebank Secretary.

Dates of Survey while building: During progress of work in shops - 1921 Mar 24 Apr 4 May 6 23 30 Jun 30 July 7 Aug 5 25 Sep 6 14 Nov 7 21 23 30 Dec 5 6
 During erection on board vessel -
 Total No. of visits *.17.*

Is the approved plan of main boiler forwarded herewith

Is the approved plan of donkey boiler forwarded herewith

Dates of Examination of principal parts—Casings *6/0/21* Rotors *6/12/21* Blading *5/12/21* Gearing *5/12/21*

Rotor shaft *6/12/21* Thrust shaft Tunnel shafts Screw shaft Propeller

Stern tube Steam pipes tested Engine and boiler seatings Engines holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Material and tensile strength of Rotor shaft *Sm. Steel 34 to 35 tons* Identification Mark on Do. *H.P. 256 277 5/12/21 L.P. 254 277 5/12/21*

Material and tensile strength of Pinion shaft *Mild Steel 40 to 45 tons* Identification Mark on Do. *H.P. 277 277 5/12/21 L.P. 277 277 5/12/21*

Material of Wheel shaft *Steel* Identification Mark on Do. *253 277 5/12/21* Material of Thrust shaft *Steel* Identification Mark on Do.

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.

Material of Steam Pipes Test pressure

Is an installation fitted for burning oil fuel Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery a duplicate of a previous case *yes* If so, state name of vessel *SD 153/20*

General Remarks (State quality of workmanship, opinions as to class, &c. *This machinery has been built under special survey, the materials and workmanship are of good description, it has been erected and tried in the shop under steam. This machinery is in my opinion eligible to have recognition of L.M.C. with date when satisfactorily fitted on board & tried under steam. To be sent to Middlesbrough.*

The amount of Entry Fee ... £ *23 5/8* *Proportion due Glasgow*
 Special ... £ *35 0*
 Donkey Boiler Fee ... £
 Travelling Expenses (if any) ... £ *10 3*
 Total fee *17 1/2* 19 22
 When applied for.
 When received.

A. M. McBeand
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW** **17 JAN 1922**
 Assigned *Deferred*



Certificate (if required) to be sent to... (The Surveyors are requested not to write on or below the space for Committee's Minute.)