

REPORT ON MACHINERY.

Received at London Office

Date of writing Report 20-5-1916 When handed in at Local Office 10 Port of Glasgow VED. 31 MAY. 1916
 No. in Survey held at Glasgow Date, First Survey 14/10/15 Last Survey 23-5-1916
 Reg. Book. on the Machinery for the single screw S.S. "CLIBURN" (Number of Vents 24) Tons { Gross / Net }
 Master J. C. Murray Built at Workington By whom built R. Williamson & Son No. 226 When built 1916
 Engines made at Boatbridge By whom made W. Beardmore & Co No. 442 when made 1916
 Boilers made at Glasgow By whom made A. W. Dalglisli & Co No. 640 when made 1916
 Registered Horse Power 53.25 Owners Stainburn S. S. Co. Ltd Port belonging to Workington
 Nom. Horse Power as per Section 28 53.25 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 12", 21", 34" Length of Stroke 24" Revs. per minute 96 Dia. of Screw shaft as per rule 4.36 Material of screw shaft W. S.
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes Is the after end of the liner made water tight in the propeller boss yes
 If the liner is in more than one length are the joints burned no If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes
 If two liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 2'-6"
 Dia. of Tunnel shaft as per rule 6.54 Dia. of Crank shaft journals as per rule 6.3/4 Dia. of Crank pin 6.3/4 Size of Crank webs 12.3/4 x 4.1/2 Dia. of thrust shaft under collars 6.3/4 Dia. of screw 9-6" Pitch of Screw 12-3" No. of Blades 4 State whether moveable no Total surface 35 square ft.
 No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Duplex Sizes of Pumps 5 1/4 x 3 1/2 x 5 + 6 x 6 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2-2" Engine Room aft + Eng Room Forward Holds, &c. 2-2" Port and Starboard Bilge.
 No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump B.P. Is a separate Donkey Suction fitted in Engine room & size yes 2 1/2"
 Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible yes
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves and Cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the Discharge Pipes above or below the deep water line Above
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel yes Are the Blow Off Cocks fitted with a spigot and brass covering plate yes
 What pipes are carried through the bunkers None How are they protected no
 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
 Dates of examination of completion of fitting of Sea Connections and of Stern Tube and Screw shaft and Propeller 4-5-16
 Is the Screw Shaft Tunnel watertight no Is it fitted with a watertight door no worked from Newcastle on Tyne (Repat. 7.9.68432.)

BOILERS, &c.—(Letter for record S) Manufacturers of Steel
 Total Heating Surface of Boilers 1585 sq ft Is Forced Draft fitted no No. and Description of Boilers 1 single ended marine
 Working Pressure 150 lbs Tested by hydraulic pressure to 360 lbs Date of test 10-3-16 No. of Certificate 13378
 Can each boiler be worked separately no Area of fire grate in each boiler 44.5 sq ft No. and Description of Safety Valves to each boiler Double Spring loaded Area of each valve 4.9 sq in Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 3'-6" Mean dia. of boilers 35.89 Length 29 Material of shell plates
 Thickness 1/2" Range of tensile strength 35,000 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams no long. seams no
 Diameter of rivet holes in long. seams 1/4" Pitch of rivets 2" Lap of plates or width of butt straps 2"
 Per centages of strength of longitudinal joint 85 Working pressure of shell by rules 35 Size of manhole in shell 24"
 Size of compensating ring no No. and Description of Stays in each boiler no Material no Outside diameter no
 Length of plain part no Thickness of plates no Description of longitudinal joint no No. of strengthening rings no
 Working pressure of fire grate by the rules no Combustion chamber plates: Material no Thickness: Sides no Back no Top no Bottom no
 Pitch of stays to ditto: Sides no Back no Top no If stays are fitted with nuts or riveted heads no Working pressure by rules no
 Material of stays no Diameter at smallest part no Area supported by each stay no Working pressure by rules no End plates in steam space: Material no Thickness no Pitch of stays no How are stays secured no Working pressure by rules no Material of stays no
 Diameter at smallest part no Area supported by each stay no Working pressure by rules no Material of Front plates at bottom no
 Thickness no Material of Lower back plate no Thickness no Greatest pitch of stays no Working pressure of plate by rules no
 Diameter of tubes no Pitch of tubes no Material of tube plates no Thickness: Front no Back no Mean pitch of stays no
 Pitch across wide water spaces no Working pressures by rules no Girders to Chamber tops: Material no Depth and thickness of girder at centre no Length as per rule no Distance apart no Number and pitch of stays in each no
 Working pressure by rules no Superheater or Steam chest; how connected to boiler no Can the superheater be shut off and the boiler worked separately no
 Diameter no Length no Thickness of shell plates no Material no Description of longitudinal joint no Diam. of rivet holes no Pitch of rivets no Working pressure of shell by rules no Diameter of flue no Material of flue plates no Thickness no
 If stiffened with rings no Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no
 Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with casing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____

Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 2 Iron Rod top end + 2 Iron Rod bottom end bolts + nuts, 2 main bearing bolts + nuts, 1 set of coupling bolts and nuts, 1 set of feed and 1 set of Bilge pump valves. A quantity of assorted bolts and nuts. Iron of various sizes.

The foregoing is a correct description,
WILLIAM BEARDMORE & CO., LIMITED. Manufacturer. *See R Sneddon*

Dates of Survey while building: During progress of work in shops --- 1915 Oct 14, Nov 29, Dec 15, 27, 1916 Jan 12, 18, 26, 31, Feb 9, 18, Mar 18, 24, 28, Apr 11, 19, 26, May 1, 5, 9, 20, 23

During erection on board vessel ---

Total No. of visits **24**

Is the approved plan of main boiler forwarded herewith _____

Dates of Examination of principal parts—Cylinders 18-1-16 Slides 18-1-16 Covers 18-1-16 Pistons 1-3-16 Rods 1-3-16

Connecting rods 14-3-16 Crank shaft 9-2-16 Thrust shaft 9-2-16 Tunnel shafts 3 one Screw shaft 18-1-16 Propeller 18-1-16

Stern tube 18-1-16 Steam pipes tested 5-5-16 Engine and boiler seatings 26-4-16 Engines holding down bolts 9-5-16

Completion of pumping arrangements 23-5-16 Boilers fixed 9-5-16 Engines tried under steam 23-5-16

Main boiler safety valves adjusted 20-5-16 Thickness of adjusting washers Port 1/4" Starboard 11/16"

Material of Crank shaft **Steel** Identification Mark on Do. **4145** Material of Thrust shaft **Steel** Identification Mark on Do. **4145**

Material of Tunnel shafts **Iron** Identification Marks on Do. _____ Material of Screw shafts **W. Iron** Identification Marks on Do. **4145**

Material of Steam Pipes **Solid drawn Copper** Test pressure **360 lbs per sq inch** **18-1-16 4.0**

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Machinery has been built under special survey in accordance with the Rules of the Society, securely fitted on board and tried under steam with satisfactory results.

The workmanship and materials are of good quality throughout.

The machinery is now, in my opinion, eligible to have notification of **L.M.C. 5-16** in the Register Book.

It is submitted that this vessel is eligible for **THE RECORD + LMC 5.16.**

The amount of Entry Fee .. £	1 : 0 : 0	When applied for,
Special	£ 12 . 9 . 0	29/5/16
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any) £	:	6/7/16

JWD 1/6/16
Wm. A. Ferguson
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **GLASGOW** 30 MAY. 1916
 Assigned + L.M.C. 5.16

FRI. JUN. -2. 1916



subject to classification of hull

GLASGOW

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

L.M.C. 19/5/16