

Received from 5-MAY 1902

No. 19838

# REPORT ON MACHINERY.

Port of Glasgow Received at London Office THUR. 8 MAY 1902

No. in Survey held at Glasgow Date, first Survey 19<sup>th</sup> Sept 1901 Last Survey 22-4 1902  
 Reg. Book. 41 on the S.S. "Kathleen" (Number of Visits 29) Tons Gross 737.90  
Net 316.01  
 Master J. Pappin Built at Ayr By whom built Ailsa S. B. Co. When built 1902  
 Engines made at Glasgow By whom made Ross + Duncan when made 1902  
 Boilers made at Glasgow By whom made Ross + Duncan when made 1902  
 Registered Horse Power 123.5 Owners John Milligan & Co. Ltd. Port belonging to Belfast  
 Nom. Horse Power as per Section 28 123.5 Is Refrigerating Machinery fitted No. Is Electric Light fitted No.

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 17-2 1/2 - 14 - 11 Length of Stroke 30 Revs. per minute 100 Dia. of Screw shaft 8 1/2 Lgth. of stern bush 3-1 1/2  
 Dia. of Tunnel shaft 8 3/4 Dia. of Crank shaft journals 8 3/4 Dia. of Crank pin 8 3/4 Size of Crank webs 5 1/2 x 12 1/2 Dia. of thrust shaft under collars 8 3/4 Dia. of screw 11-3 Pitch of screw 12-9 No. of blades 4 State whether moveable No Total surface 44 sq ft  
 No. of Feed pumps 2 Diameter of ditto 3 Stroke 16 1/2 Can one be overhauled while the other is at work yes.  
 No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 16 1/2 Can one be overhauled while the other is at work yes.  
 No. of Donkey Engines 3 Sizes of Pumps 6 x 4 x 6, 6 x 8 1/2 x 6, 3 x 2 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 1-2 1/4, 1-2 1/2, S.B. 2 1/4 In Holds, &c. 4-2  
 No. of bilge injections 1 sizes 4 1/2 Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size 1-2 1/4  
 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 both  
 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 yes  
 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  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock 15-3-02 Building ship Is the screw shaft tunnel watertight none  
 Is it fitted with a watertight door yes worked from yes

BOILERS, &c.— (Letter for record B) Total Heating Surface of Boilers 2039 sq ft Is forced draft fitted No  
 No. and Description of Boilers 1 Cyl. Mult. S. E. Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs  
 Date of test 14-3-02 Can each boiler be worked separately yes Area of fire grate in each boiler 60 sq ft No. and Description of safety valves to each boiler 2 Direct Spring Area of each valve 6.49 sq in Pressure to which they are adjusted 165 lbs Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 8 ft Mean dia. of boilers 15'0" Length 10'6" Material of shell plates steel  
 Thickness 3/16" Range of tensile strength 27-37 Are they welded or flanged no Descrip. of riveting: cir. seams Lap D.R. long. seams S.B. straps Table  
 Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8" Lap of plates or width of butt straps 17"  
 Per centages of strength of longitudinal joint 87 Working pressure of shell by rules 170 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring N/A No. and Description of Furnaces in each boiler 3 Ribbed Material steel Outside diameter 45 1/2"  
 Length of plain part 7-1 Thickness of plates 17/32" Description of longitudinal joint weld No. of strengthening rings none  
 Working pressure of furnace by the rules 167 lbs Combustion chamber plates: Material steel Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 5/8"  
 Pitch of stays to ditto: Sides 8 1/2 x 8 1/2 Back 8 1/2 x 8 1/2 Top 8 1/2 x 8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 169 lbs  
 Material of stays steel Diameter at smallest part 1 3/8" Area supported by each stay 92 sq in Working pressure by rules 160 lbs End plates in steam space: Material steel Thickness 15/16" Pitch of stays 17 1/2 x 16 How are stays secured Nuts + Riv washers Working pressure by rules 160 lbs Material of stays steel  
 Diameter at smallest part 2 1/8" Area supported by each stay 280 sq in Working pressure by rules 169 lbs Material of Front plates at bottom steel  
 Thickness 3/4" Material of Lower back plate steel Thickness 3/2" Greatest pitch of stays 13" Working pressure of plate by rules 320 lbs  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 8 1/2"  
 Pitch across wide water spaces 13 1/2" Working pressures by rules 146, 278 Girders to Chamber tops: Material iron Depth and thickness of girder at centre 7-2" Length as per rule 30" Distance apart 8" Number and pitch of Stays in each 2-8 1/2"  
 Working pressure by rules 170 lbs Superheater or Steam chest: how connected to boiler none Can the superheater be shut off and the boiler worked separately yes  
 Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness  
 If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed  
 Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

Is a Report also sent on the Hull of the Ship?

02062-002070-0182



**DONKEY BOILER**— No. 1 Description Vertical  
 Made at Frotherwell By whom made J. Marshall & Co When made 1902 Where fixed Stokehold  
 Working pressure 75 lbs tested by hydraulic pressure to 150 lbs No. of Certificate 6087 Fire grate area 11 1/2 Description of safety valves Direct spring  
 No. of safety valves 1 Area of each 4.9 Pressure to which they are adjusted 75 lbs If fitted with easing gear yes If steam from main boilers can enter the donkey boiler no Dia. of donkey boiler 4'-6" Length 11'-0" Material of shell plates steel Thickness 3/8" Range of tensile strength 27-32 Descrip. of riveting long. seams treble lap Dia. of rivet holes 13/16" Whether punched or drilled drilled Pitch of rivets 3 1/4"  
 Lap of plating 5 1/2" Per centage of strength of joint 75 Rivets 168 Thickness of shell crown plates 1/2" Radius of do. 4'-0" No. of Stays to do. 4  
 Dia. of stays. 1 5/8" Diameter of furnace Top 3'-7" Bottom 3'-11 1/2" Length of furnace 4'-10" Thickness of furnace plates 7/16" Description of joint weld Thickness of furnace crown plates 1/2" Stayed by as above Working pressure of shell by rules 105 lbs  
 Working pressure of furnace by rules 102 lbs Diameter of uptake 12" Thickness of uptake plates 1/2" Thickness of water tubes 3/8"

**SPARE GEAR.** State the articles supplied:— 2 Top end bolts, 2 bottom end bolts, 2 main bearing bolts set coupling bolts set feed pump valves, set bilge pump valves, set some bottom rings for H.P. & M.P. quantity of assorted bolts, nuts, iron, various sizes, 2 valves for main & 1 for donkey check valves, 6 piston bolts, 20 fire bars, 6 bondinas tubes, 3 boiler tubes.  
 The foregoing is a correct description,  
Loos & Duncan Manufacturer.

Dates of Survey while building  
 During progress of work in shops— 1901:— Sep. 19 Oct. 10, 14, 17, 23, 31 Nov. 11, 25 Dec. 4, 9 1902:— Jan. 9, 16, 20, 23, 27, 29 Feb. 3, 11, 14, 18, 19, 21, 24  
 During erection on board vessel— Mar. 4, 10, 14 Apr. 4, 11, 22.  
 Total No. of visits 29. Is the approved plan of main boiler forwarded herewith yes  
 " " " donkey " " " yes.

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

Material of screw shaft scrap iron 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 yes

Lloyd's Register

The machinery of this vessel has been constructed under special survey, the material and workmanship are of good quality, it has been securely fitted on board and tried under steam.  
 In my opinion it is eligible to be classed in the Register Book with the record of **L.M.C. 4.02.**

It is submitted that this vessel is eligible for **THE RECORD - L.M.C. 4.02**

The amount of Entry Fee... £ 2 : : When applied for, 6/5/02 Paid 28/20/2  
 Special ... £ 18 : : 13/5/02  
 Donkey Boiler Fee ... £ 2 : : 13/5/02  
 Travelling Expenses (if any) £ : : 13/5/02  
 Total £ 22 : : 13/5/02  
 Paid 13/5/02 by J. Barrett Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute Glasgow, 7-MAY 1902  
 Assigned L.M.C. 4.02

