

REPORT ON MACHINERY.

Port of Glasgow

Received at London Office TUES. 16 SEP 1902

No. in Survey held at Glasgow Date, first Survey 29th Oct. 1901 Last Survey 30th Aug 1902

Reg. Book. 116 on the S.S. "THE COUNTESS" (Number of Visits 43) Tons Gross 624.38
Net 234.60

Master Peter Morrison Built at Glasgow By whom built The Aulsa S.B.C. When built 1902

Engines made at Glasgow By whom made Muir & Houston Ltd when made 1902

Boilers made at Glasgow By whom made Muir & Houston Ltd when made 1902

Registered Horse Power _____ Owners J. Hay & Sons Port belonging to Glasgow

Nom. Horse Power as per Section 28 98 Is Refrigerating Machinery fitted No. Is Electric Light fitted No.

ENGINES, &c.—Description of Engines Compound - screw No. of Cylinders 2 No. of Cranks 2
 Dia. of Cylinders 30 1/2" & 44" Length of Stroke 30" Revs. per minute 100 Dia. of Screw shaft 9 7/16" as per rule 9 7/16" as fitted 9 1/4" Lgth. of stern bush 3 1/2"
 Dia. of Tunnel shaft 9 1/8" as per rule 9 1/8" as fitted 9 1/8" Dia. of Crank shaft journals 9 1/8" as per rule 9 1/8" as fitted 9 1/8" Dia. of Crank pin 9 1/8" Size of Crank webs 5 3/4" Dia. of thrust shaft under collars 9 1/8" Dia. of screw 10.0" Pitch of screw 13.0" No. of blades 4 State whether moveable no Total surface 30 sq. ft.
 No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 15" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work yes
 No. of Donkey Engines Three Sizes of Pumps 6x6x6-6x4 1/4x6-4x2 3/4x5 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Two 2 1/2" dia. In Holds, &c. Two 2" dia.

No. of bilge injections 1 sizes 3" Connected to condenser, or to circulating pump hump 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 none
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks valves & 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 ✓
 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 before launch Is the screw shaft tunnel watertight none
 Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.— (Letter for record _____) (S.) Total Heating Surface of Boilers 1543 sq. ft. Is forced draft fitted no
 No. and Description of Boilers One single ended Working Pressure 135 lbs Tested by hydraulic pressure to 260 lbs
 Date of test 25/3/02 Can each boiler be worked separately ✓ Area of fire grate in each boiler 62 1/2 sq. ft. No. and Description of safety valves to each boiler 2 Patent spring Area of each valve 8.29 sq. in. Pressure to which they are adjusted 135 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 3.9" Mean dia. of boilers 14.3" Length 10.0" Material of shell plates steel
 Thickness 3/32" Range of tensile strength 28 to 32 Are they welded or flanged no Descrip. of riveting: cir. seams double long. seams treble
 Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 2 1/2" Lap of plates or width of butt straps 1.5"
 Per centages of strength of longitudinal joint rivets 86.5 Working pressure of shell by rules 134 lbs Size of manhole in shell 16 x 12"
 Size of compensating ring McNeil's No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 3.9"
 Length of plain part top 6.0" bottom 6.6" Thickness of plates crown 1/16" bottom 1/16" Description of longitudinal joint welded No. of strengthening rings none
 Working pressure of furnace by the rules 142 lbs Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 15/16"
 Pitch of stays to ditto: Sides 8x9" Back 9x9" Top 8x8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 135 lbs
 Material of stays steel Area at smallest part 1.45 sq. in. Area supported by each stay 81 sq. in. Working pressure by rules 143 lbs End plates in steam space:
 Material steel Thickness 13/16" Pitch of stays 16x15" How are stays secured nuts Working pressure by rules 130 lbs Material of stays steel
 Area at smallest part 3.49 sq. in. Area supported by each stay 240 lbs Working pressure by rules 145 lbs Material of Front plates at bottom steel
 Thickness 1/16" Material of Lower back plate steel Thickness 1/16" Greatest pitch of stays 13x9" Working pressure of plate by rules 131 lbs
 Diameter of tubes 3 1/2" Pitch of tubes 49 1/4 x 47 1/2 Material of tube plates steel Thickness: Front 1/8" Back 5/8" Mean pitch of stays abt 9 5/8"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 140 lbs Girders to Chamber tops: Material iron Depth and thickness of girder at centre 7 1/2" x 2-7/8" Length as per rule 32" Distance apart 8" Number and pitch of Stays in each 3-8"
 Working pressure by rules ✓ Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked separately ✓
 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 ✓

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship? [500-4-02-Copyable Ink.]

DONKEY BOILER— No. One Description

Made at Glasgow By whom made Muir & Houston R^{ts} When made 1902 Where fixed in stokehold
Working pressure 70 lbs tested by hydraulic pressure to 140 lbs No. of Certificate 6201 Fire grate area 15 1/4 sq ft Description of safety valves patent spring
No. of safety valves one Area of each 7.06 Pressure to which they are adjusted 73 lbs If fitted with easing gear yes If steam from main boilers can enter the donkey boiler no Dia. of donkey boiler 5.0 Length 10.0 Material of shell plates steel Thickness 3/8 Range of tensile strength 27-32 Descrip. of riveting long. seams double lap Dia. of rivet holes 15/16 Whether punched or drilled drilled Pitch of rivets 3/4
Lap of plating 5 Per centage of strength of joint Rivets 9/16 Plates 7/16 Thickness of shell crown plates 5/8 Radius of do. 4.6 No. of Stays to do. none
Dia. of stays. ✓ Diameter of furnace Top 3.11 Bottom 4.5 Length of furnace 3.9 Thickness of furnace plates 1/2 Description of joint riveted Thickness of furnace crown plates 5/8 Stayed by none Working pressure of shell by rules 93 lbs
Working pressure of furnace by rules 105 lbs Diameter of uptake 15 in Thickness of uptake plates 1/2 Thickness of water tubes 7/16

SPARE GEAR. State the articles supplied:— Two top end & two bottom end connecting rod bolts, two main bearing bolts, one set of coupling bolts, one set of feed & bilge pump valves. Etc.

The foregoing is a correct description,

For Muir & Houston, Limited. Manufacturer.

Dates of Survey while building
During progress of work in shops: 1901 Oct. 29, 31, Nov. 8, 11, 18, 28, Dec. 3, 20, 1902, Jan. 14, 17, 20, 23, 30, Feb. 11, 18, 24, Mar. 6, 10, 25, Apr. 12,
During erection on board vessel: May 4, 9, 12, 14, 19, 26, June 2, 6, 14, 23, July 1, 2, 6, 15, 31, August 11, 15, 20, 21, 22, 25-28, 30.
Total No. of visits 147

Is the approved plan of main boiler forwarded herewith no same as s/s The Princess
" " " donkey " " " " "

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

Material of screw shaft iron Is the screw shaft fitted with a continuous liner the whole length of the stern tube 2 liners
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 burned
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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓

The machinery of this vessel has been constructed under Special Survey, the material & workmanship are of good quality, it has been securely fastened on board tried under steam & found satisfactory. In my opinion it is eligible to be classed in the Register Book with the record of +LMC 8.02

It is submitted that this vessel is eligible for THE RECORD. +LMC 8.02
WP of main boiler 130 lbs

The amount of Entry Fee... £ 14.14.15/9/02
Special ... £ 14.14.15/9/02
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : 6 : 30/9/02

J. W. Dimmock
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **GLASGOW.** 5 SEP. 1902
Assigned +LMC 8.02

