

REPORT ON MACHINERY.

8331

No. 8331

Port of Glasgow

Received at London Office SAT 4 FEB 1888

No. in Survey held at Glasgow

Date, first Survey 30th Aug 1887 Last Survey 27th 1888

Reg. Book.

(Number of Visits 30)

Tons 3918

1420 on the S.S. "Curaco"

Master James Nixon Built at Glasgow

By whom built J. Eldon & Coy

When built 1871-1872

Engines made at Glasgow

By whom made The Fairfield Coy (Ltd)

when made 1887-8

Boilers made at " "

By whom made " "

when made 1887-8

Registered Horse Power 600

Owners Orient Steam Navigation Coy (Limited)

Port belonging to Liverpool

ENGINES, &c.

Description of Engines Triple Expansion
 Diameter of Cylinders 35 54 90 Length of Stroke 54 No. of Rev. per minute 42 Point of Cut off, High Pressure — Low Pressure —
 Diameter of Screw shaft 16 Diam. of Tunnel shaft — Diam. of Crank shaft journals 16 1/2 Diam. of Crank pin 14 size of Crank webs 12 x 24 x 33
 Diameter of screw 18 1/2 Pitch of screw 24 1/2 No. of blades 4 state whether moveable Yes total surface 102 ft
 No. of Feed pumps Two diameter of ditto 6 1/2 Stroke 23 Can one be overhauled while the other is at work Yes
 No. of Bilge pump Two diameter of ditto 6 1/2 Stroke 23 Can one be overhauled while the other is at work Yes
 Where do they pump from All Compartments
 No. of Donkey Engines Double ended 9 1/2 x 5 x 10 1/2 Where do they pump from Sea bilge & Hotwell
 Heats " 11 1/2 x 8 x 10 " " 11 x 9 x 24 (Single)

Are all the bilge suction pipes fitted with roses Yes Are the roses always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes
 No. of bilge injections One and sizes 3 Are they connected to condenser, or to circulating pump To Circulating Condenser
 How are the pumps worked by Levers
 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 Yes
 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 Bilge pipes to fore hold and How are they protected by wood + iron casing
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges Yes
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Dec. 8th 1888
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper Deck

BOILERS, &c.

Number of Boilers Three Description Double ended, cylindrical Whether Steel or Iron Steel
 Working Pressure 150 lbs Tested by hydraulic pressure to 300 lbs Date of test 25th November 1888
 Description of superheating apparatus or steam chest None
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately —
 No. of square feet of fire grate surface in each boiler 108 ft Description of safety valves Direct Spring No. to each boiler Two
 Area of each valve 14-19 Are they fitted with easing gear Yes No. of safety valves to superheater — area of each valve —
 Are they fitted with easing gear — Smallest distance between boilers and bunkers or woodwork — Diameter of boilers 12-8"
 Length of boilers 16-9 description of riveting of shell long. seams Double butt strap circum. seams Treble riveted Thickness of shell plates 13/32
 Diameter of rivet holes 1 1/16 whether punched or drilled Drilled pitch of rivets 4 1/2 x 3 1/2 Lap of plating straps 257 3/4
 Per centage of strength of longitudinal joint 85% working pressure of shell by rules 150 lbs size of manholes in shell 16 x 12
 Size of compensating rings Lapped rings No. of Furnaces in each boiler Six
 Outside diameter 3-3 length, top 6-10 1/2 bottom — thickness of plates 8/16 description of joint Corrugated if rings are fitted
 Greatest length between rings — working pressure of furnace by the rules 154 lbs combustion chamber plating, thickness, sides 8/16 back — top 8/16
 Pitch of stays to ditto, sides 4 x 4 back — top 6 x 4 If stays are fitted with nuts or riveted heads Nuts 1 1/16 working pressure of plating by rules 156 lbs
 Pitch of stays to ditto, top 6 x 4 back — top 6 x 4 working pressure of ditto by rules 163 lbs and plates in steam space, thickness 13/16
 Pitch of stays to ditto, back 4 x 4 back — top 6 x 4 how stays are secured by double nuts working pressure, by rules 150 lbs diameter of stays at smallest part 2 3/8
 Greatest pitch of stays — working pressure by rules 162 lbs Front plates at bottom, thickness 11/16 Back plates, thickness —
 plates, front 12/16 back 13/16 Diameter of tubes 3 1/4 pitch of tubes 4 3/8 x 4 3/8 thickness of tube —
 Diameter of Superheater or Steam chest None length — thickness of plates — description of longitudinal joint — diam. of rivet holes —
 Pitch of rivets — working pressure of shell by rules — diameter of flue — thickness of plates — If stiffened with rings —
 Distance between rings — working pressure by rules — end plates of superheater, or steam chest; thickness — how stayed —

GLS155-0015

Superheater or steam chest; how connected to boiler
None fitted as originally intended

Form No. 8-9000-17/5/86-T. & S.

DONKEY BOILER— Description *Round Multitubular*
 Made at *Glasgow* by whom made *Fairfield & Co Coy* when made *1888* where fixed *on main deck*
 Working pressure *150 lbs* tested by hydraulic pressure to *300 lbs* No. of Certificate *1898* fire grate area *12 1/2* description of safety valves *Direct Spring* No. of safety valves *one* area of each *4"* if fitted with casing gear *yes* if steam from main boilers can enter the donkey boiler *no* diameter of donkey boiler *6' 6"* length *4'* description of riveting *Double riveted*
 Thickness of shell plates *2 1/32"* diameter of rivet holes *1 5/16"* whether punched or drilled *Drilled* pitch of rivets *4 1/2"* lap of plating *4"*
 per centage of strength of joint *4 3/4%* thickness of *end* plates *1 1/16"* stayed by *bar stays 7 1/4" x 1 1/2"* pitch *4"* *stayed with washers 9/16"*
 Diameter of furnace *2' 6"* bottom *—* length of furnace *5 1/2'* thickness of plates *3/16"* description of joint *Corrugated*
 Thickness of *Double Chamber* plates *3/16"* stayed by *Screw Stays 7" x 7"* pitch *1 1/2"* dia working pressure of shell by rules *175 lbs*
 Working pressure of furnace by rules *157 lbs* diameter of *same 2' 4"* thickness of plates *—* thickness of water tubes *—*

SPARE GEAR. State the articles supplied: *2 bolts & nuts for bottom end of each connecting rod, & 14 for top ends*
2 main bearing bolts & 9 Coupling bolts (shafting) 2 Piston rods, 1 Air pump rod, 1 Feed & Bridge pump
plunger & 1 set valve spindles, 3 pairs Crank pin brasses & 3 Crosshead brasses, 1 bush
for stem tube & puddle post complete, 6 valves for feed & bridge pumps Air pump bucket complete
6 valves for all the pumps, and a considerable quantity of other gear
 The foregoing is a correct description,
THE FAIRFIELD SHIPBUILDING AND ENGINEERING CO. LIMITED, Manufacturer
R. Barnwell DIRECTOR

General Remarks (State quality of workmanship, opinions as to class, &c.) *This vessel has now been fitted with new Engines and Boilers complete, including new shafting and all the sea connections. The workmanship and materials are of the best description and on the Engines & Boilers being tried under steam were found to be in good order and safe working condition and eligible in our opinion to be noted in the Register Book **Lloyd's** M. C. 1/88.*

The Copper Steam pipes in this case were not tested (in the presence of a Surveyor to the Society) under Hydraulic pressure as required by the Committee (See Secretary's letter of 24th January 1888)

It is submitted that this vessel is eligible to have the notification + Lms 1.88 recorded.
 DF 4/2/88

James Morrison
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Clyde District

The amount of Duty Fee £ 3 : - : - received by me,
 Special £ 52 : 10 : -
 Donkey Boiler Fee £ - : - : -
 Certificate (if required) £ - : - : - 3/2/1888
 To be sent as per margin.
 (Travelling Expenses, if any, £ - : - : -)

Committee's Minute TUESDAY 7 FEB 1888
 + Lms 1/88
 W & A B 88