

REPORT ON MACHINERY

No. 5966

No. in Survey held at

Hull

Date, first Survey March 11th

Last Survey July 12th 1886

Reg. Book.

on the Iron Screw Steamer Eldorado

(Number of Visits 30) 1381.86

Tons 827.90

Master Roach

Built at

Hull

By whom built

Charles Shipbuilding & Co. Ltd

When built 1886

Engines made at

Hull

By whom made

Charles & Co. Ltd

when made 1886

Boilers made at

Hull

By whom made

Charles & Co. Ltd

when made 1886

Registered Horse Power 250

Owners J. Wilson Sons & Co.

Port belonging to Hull

ENGINES, &c.—

Description of Engines Triple Compound, Inverted, Direct Acting.

Diameter of Cylinders 28" 43" 70" Length of Stroke 39" No. of Rev. per minute 88 Point of Cut off, High Pressure .6 Intermediate .62 Low Pressure .612

Diameter of Screw shaft 12" Diam. of Tunnel shaft 11 1/2" Diam. of Crank shaft journals 11 1/2" 11 1/4" Diam. of Crank pin 11 1/2" size of Crank webs 9" x 13" built

Diameter of screw 13.6" Pitch of screw 18.5" x 21.0" No. of blades 4 state whether moveable no total surface 64 sq ft

No. of Feed pumps Two diameter of ditto 3 1/2" Stroke 22" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two diameter of ditto 5" Stroke 22" Can one be overhauled while the other is at work Yes

Where do they pump from Fore Main & After holds, Engine room bilge, Sea deliveries back & overboard

No. of Donkey Engines one Size of Pumps 4 1/2 double 8 stroke Where do they pump from Fore Peak Fore, Main and

After holds, Engine room, Hotwell Sea, deliveries, Boilers, Condenser, back, & overboard.

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 5 1/2" Are they connected to condenser, or to circulating pump to circulating pump

How are the pumps worked Air, Feed, & Bilge pumps by rocking lever from Main Engine. Centrifugal Circulating pump worked by separate engine

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 for

What pipes are carried through the bunkers Ducts to Forward How are they protected Wood cased.

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes in Engine room.

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 Now new, Launched 22nd May 1886

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Running deck.

BOILERS, &c.—

Number of Boilers Two Description Circular Multitubular Double Whether Steel or Iron Steel

Working Pressure 154 lbs Tested by hydraulic pressure to 308 lbs Date of test 2nd & 5th June 1886

Description of superheating apparatus or steam chest None fitted

Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately Yes

No. of square feet of fire grate surface in each boiler 70 sq ft Description of safety valves Spring loaded No. to each boiler Two

Area of each valve 9.62 sq ft Are they fitted with easing gear Yes No. of safety valves to superheater Yes area of each valve Yes

Are they fitted with easing gear Yes Smallest distance between boilers and bunkers or woodwork 10" Diameter of boilers 13.0"

Length of boilers 16.0" description of riveting of shell long. seams Hot shop riv circum. seams Able riv lap Thickness of shell plates 1 1/2"

Diameter of rivet holes 1 3/16" whether punched or drilled drilled pitch of rivets 7 1/4" Lap of plating 18 3/4"

Percentage of strength of longitudinal joint 83% working pressure of shell by rules 160 lbs size of manholes in shell 16" x 12"

Size of compensating rings 2.4" x 2.4" x 1 1/2" No. of Furnaces in each boiler Four

Outside diameter 3.9" length, top 6.0" bottom 6.0" thickness of plates 9/16" description of joint Welded if rings are fitted Yes

Greatest length between rings 15.5" working pressure of furnace by the rules 155 lbs combustion chamber plating, thickness, sides 9/16" back - top 9/16"

Pitch of stays to ditto, sides 8" back Yes top 8" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by

rules 154 lbs Diameter of stays at smallest part 1 5/16" working pressure of ditto by rules 170 lbs end plates in steam space, thickness 1/4"

Pitch of stays to ditto 15" how stays are secured Able nuts extra, working pressure by rules 154 lbs diameter of stays at

smallest part 2 1/4" working pressure by rules 160 lbs Front plates at bottom, thickness 3/4" Back plates, thickness Yes

Greatest pitch of stays Yes working pressure by rules Yes Diameter of tubes 3 1/2" pitch of tubes 4 1/2" thickness of tube

plates, front 13/16" back 3/4" how stayed Stay tubes pitch of stays 9" x 13 1/2" width of water spaces 1 1/2"

Diameter of Superheater or Steam chest 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

Superheater or steam chest; how connected to boiler

DONKEY BOILER— Description *Vertical Cylinder with internal Furnace*
Made at *Hull* by whom made *Earle Shipbuilding & Co. Ltd.* when made *1886* where fixed *Witchole*
Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *238* fire grate area *11 sq ft* description of safety
valves *Spring loaded* No. of safety valves *one* area of each *7.07* if fitted with easing gear *Yes* if steam from main boilers can
enter the donkey boiler *No* diameter of donkey boiler *5.0"* length *10.0"* description of riveting *single riv lap joint*
Thickness of shell plates *1/4"* diameter of rivet holes *13/16"* whether punched or drilled *drilled* pitch of rivets *1 1/4"* lap of plating *3"*
per centage of strength of joint *53%* thickness of crown plates *1/2"* stayed by *4 steel stays 1 1/2" effective diam*
Diameter of furnace, top *3.9"* bottom *4.5"* length of furnace *5.6"* thickness of plates *1/2"* description of joint *single riv lap*
Thickness of furnace crown plates *1/2"* stayed by *4 steel stays 1 1/2" effective diam* working pressure of shell by rules *80 lbs*
Working pressure of furnace by rules *80 lbs* diameter of uptake *13" x 16"* thickness of plates *1/4"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied: *2 Iron Lifting, 2 Iron bottom end, 1 Iron main bearing bolts, One set of
coupling bolts, One set of feed pump valves, one set of Bilge pump valves, One Air pump, bucket head
valve & seat, 2 iron safety valve springs for main boiler, One safety valve spring for donkey boiler,
one complete set of springs for escape valves, 6 Boiler tubes, 50 Condenser tubes 100 Small, 2 iron
guage glasses, One set of white metal strips for connecting rods bottom ends*

The foregoing is a correct description,

EARLE'S
SHIPBUILDING & ENGINEERING CO. LIMITED Manufacturer.

W. Pearson
General Remarks (State quality of workmanship, opinions as to class, &c. *Workmanship Good*
ASST. GENERAL MANAGER

The Machinery and Boilers of this Vessel, have been constructed under Special Survey, and placed on board in accordance with the requirements of the Society's Rules. They are now in my opinion in safe working condition, and the case is respectfully submitted as eligible for the notification
L.M.C. 7.86. in the Register Book.

*This submitted has this
been is eligible to have
of L.M.C. 7.86 been did
M 3/8/86*

The amount of Entry Fee .. £ 2 : " : " received by me,

Special .. £ 32 : 10 : "

Donkey Boiler Fee .. £ 2 : 2 : "

Certificate (if required) .. £ *Gratis* 21/7 1886

To be sent as per margin.

(Travelling Expenses, if any, £ ..)

Committee's Minute

FRIDAY 13 AUGUST 1886

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