

# REPORT ON MACHINERY.

THURS 9 SEPT 1886

Received at London Office 18

No. 3245

No. in Survey held at Glasgow & Belfast Date, first Survey 22<sup>nd</sup> Dec 1885 Last Survey 7<sup>th</sup> Sept 1886

Reg. Book. (Number of Visits 44) 654.53

on the Screw Steamer "Ethelbald" Tons 423.28

Master S. Smith Built at Belfast By whom built Worthman & Clark When built 1886

Engines made at Glasgow By whom made Hutton & Corbett when made 1886

Boilers made at " By whom made " when made 1886

Registered Horse Power 95 Owners Colvils London & Co Port belonging to Glasgow

## ENGINES, &c.—

Description of Engines Triple Expansion

Diameter of Cylinders 15" 24" 40" Length of Stroke 33" No. of Rev. per minute 80 Point of Cut off, High Pressure 1/16" Low Pressure 1/16"

Diameter of Screw shaft 8 1/2" Diam. of Tunnel shaft 7 1/2" Diam. of Crank shaft journals 8 5/16" Diam. of Crank pin 8 5/16" size of Crank webs 5 1/2" x 9 1/2"

Diameter of screw 10" 8" Pitch of screw 13 1/2" No. of blades 4 state whether moveable Yes total surface 32.5

No. of Feed pumps One diameter of ditto 2 3/4" Stroke 18" Can one be overhauled while the other is at work —

No. of Bilge pumps One diameter of ditto 2 3/4" Stroke 18" Can one be overhauled while the other is at work —

Where do they pump from All Compartments

No. of Donkey Engines One Size of Pumps 8 x 4 x 10" Where do they pump from Sanct. Sea, Bilges & Hold

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 13" Are they connected to condenser, or to circulating pump & Circulating

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 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 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 Before launching

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper platform

## BOILERS, &c.—

Number of Boilers One Description Round Horizontal Whether Steel or Iron Steel

Working Pressure 150 lbs Tested by hydraulic pressure to 310 lbs Date of test 4<sup>th</sup> August 1886

Description of superheating apparatus or steam chest None

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

No. of square feet of fire grate surface in each boiler 40 sq ft Description of safety valves Direct Spring No. to each boiler Two

Area of each valve 4" 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 10" Diameter of boilers 12' 3"

Length of boilers 9' 9" description of riveting of shell long. seams Double riveted circum. seams Double riveted Thickness of shell plates 1 1/2"

Diameter of rivet holes 1 3/16" whether punched or drilled Fitted pitch of rivets 6 3/4" x 3 3/8" Lap of plating 19" x 1 3/16" straps

Percentage of strength of longitudinal joint 82 working pressure of shell by rules 150 lbs size of manholes in shell 16" x 12"

Size of compensating rings Double piece No. of Furnaces in each boiler Three

Outside diameter 3 ft length, top 6' 9" bottom 9 ft thickness of plates 8 1/16" description of joint Corrugated if rings are fitted —

Greatest length between rings — working pressure of furnace by the rules 166 lbs combustion chamber plating, thickness, sides 8 1/16" back 8 1/16" top 8 1/16"

Pitch of stays to ditto, sides 4" x 4" back 4" x 4" top 4" x 4" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 10 7/16 lbs

Diameter of stays at smallest part 1 3/8" working pressure of ditto by rules 190 lbs end plates in steam space, thickness 1 1/16"

Pitch of stays to ditto 1 1/2" x 1 1/2" how stays are secured By double nuts working pressure by rules 150 lbs diameter of stays at smallest part 2 3/4"

Greatest pitch of stays 1 1/2" x 4" working pressure by rules — Diameter of tubes 3 1/2" pitch of tubes 4 3/4" x 4 3/4" thickness of tube plates, front 1 5/16" back 1 3/16"

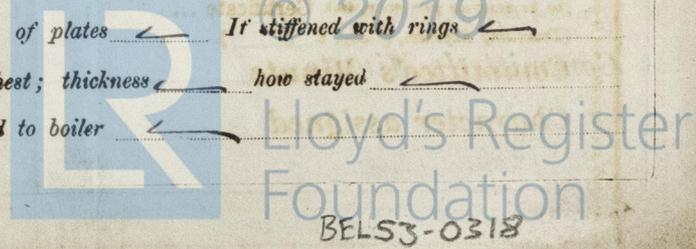
how stayed By tubes pitch of stays 9 1/2" x 9 1/2" width of water spaces 6

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 —



BEL53-0318

**DONKEY BOILER**—

Description *Round vertical (cross tube)*

Made at *Clayton* by whom made *Hutton & Corbett* when made *1886* where fixed *In Stockhold*

Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs*. No. of Certificate *1729* fire grate area *12 ft<sup>2</sup>* description of safety

valves *Direct Spring* No. of safety valves *One* area of each *4"* if fitted with easing gear *Yes* if steam from main boilers can

enter the donkey boiler *No* diameter of donkey boiler *5 ft* length *9'6"* description of riveting *Double & Single*

Thickness of shell plates *9/16"* diameter of rivet holes *13/16"* whether punched or drilled *Drilled* pitch of rivets *3"* lap of plating *1"*

per centage of strength of joint *70* thickness of crown plates *1/16"* stayed by *Uptake + 6 (2" dia solid stays)*

Diameter of furnace, top *3'8"* bottom *4 ft* length of furnace *4'6"* thickness of plates *8/16"* description of joint *Lap Single*

Thickness of furnace crown plates *9/16"* stayed by *as above* working pressure of shell by rules *84 lbs*

Working pressure of furnace by rules *83 lbs* diameter of uptake *12"* thickness of plates *9/16"* thickness of water tubes *9/16" x 9 1/2" dia*

**SPARE GEAR.** State the articles supplied: *Two connecting rod bolts & nuts top & bottom 2 main*

*bearing bolts one set coupling bolts 3 Piston bolts & nuts Half set piston*

*springs for each piston One feed & one bridge pump valve also four pump*

*valves 2 Propeller blades assorted bolts nuts, iron &c*

The foregoing is a correct description,

*H. Hutton & Corbett* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c. *These Engines & Boilers are of*

*good workmanship & materials and are now in good order & safe*

*working condition and eligible in my opinion to be noted in the*

*Register Book* **Lloyds M.C. 9/86**

The amount of Entry Fee .. £ 1 : 0 : 0 received by me, )

Special .. £ 14 : 5 : 0

Donkey Boiler Fee .. £ 0 : 0 : 0

Certificate (if required) .. £ 0 : 0 : 0 *4/9/1886*

To be sent as per margin.

(Travelling Expenses, if any, £ - 8/- )

Committee's Minute

FRIDAY 10 SEPT 1886

*[Signature]*

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

*Clyde District*

Lloyd's Register  
Foundation