

REPORT ON MACHINERY.

No. 5926

No. in Survey held at

Hull

Date, first Survey February 25 1885 Last Survey 4 May 1886

Reg. Book.

on the

Iron Screw Steamer Pera

Tons 149.3.18

Master

Wills

Built at

Hull

By whom built

Charles Co (Lim)

When built 1886

Engines made at

Hull

By whom made

Bailey & Leatham

when made 1886

Boilers made at

Hull

By whom made

Bailey & Leatham

when made 1886

Registered Horse Power

180

Owners

W S Bailey

Port belonging to

Hull

ENGINES, &c.—

Description of Engines

Compound Inverted cylinders Direct acting Surface Condensing

Diameter of Cylinders 34" x 65" Length of Stroke 39" No. of Rev. per minute 66 Point of Cut off, High Pressure 9/16 Low Pressure 1/2

Diameter of Screw shaft 11 1/4" Diam. of Tunnel shaft 10 3/4" Diam. of Crank shaft journals 11" Diam. of Crank pin 11 1/4" size of Crank webs 21" x 8" built

Diameter of screw 15.0 Pitch of screw 16.9" x 18.6" No. of blades 11 state whether moveable yes total surface 56 sq feet

No. of Feed pumps 2 diameter of ditto 4 1/2" Stroke 20" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 diameter of ditto 4 1/2" Stroke 20" Can one be overhauled while the other is at work yes

Where do they pump from Engine room bilge, Stern, Fore, Main & after holds

No. of Donkey Engines 2 Size of Pumps 9" x 10" 5 1/2" x 8" Where do they pump from Ballast Donkey, Fore, Main & after holds

and all bilge sections Circulates water through condenser, & E. Donkey from sea

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 4 1/2" Are they connected to condenser, or to circulating pump circulating pump

How are the pumps worked by rocking levers from piston rod crossheads

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 suction 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

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 Nov Dec Launched 11 March 1886

Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Main deck

OILERS, &c.—

Number of Boilers 2 Description Circular Multitubular Whether Steel or Iron Steel

Working Pressure 95 lbs Tested by hydraulic pressure to 190 lbs Date of test 19 Nov 1885

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 53.6 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 1 area of each valve 1

Are they fitted with easing gear yes Smallest distance between boilers and bunkers or woodwork 18" Diameter of boilers 14.2"

Length of boilers 10.9" description of riveting of shell long. seams double strap butt circum. seams double lap Thickness of shell plates 3/8"

Diameter of rivet holes 1 1/8" whether punched or drilled drilled pitch of rivets 4 1/2" long Lap of plating 12 1/2" straps

Per centage of strength of longitudinal joint 72 1/2 working pressure of shell by rules 96 lbs size of manholes in shell 16 1/2" x 12"

Size of compensating rings 2.44 x 2.0" x 3/8" No. of Furnaces in each boiler three

Outside diameter 4.3" length, top 7.0" bottom 7.0" thickness of plates 3/8" description of joint Welded if rings are fitted yes

Greatest length between rings 6.5" working pressure of furnace by the rules 116 lbs combustion chamber plating, thickness, sides 1/2" back 1/2" top 1/2"

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 1/2" If stays are fitted with nuts or riveted heads nuts working pressure of plating by

rules 101 lbs Diameter of stays at smallest part 1 1/2" working pressure of ditto by rules 95 lbs end plates in steam space, thickness 3/16"

Pitch of stays to ditto 15" x 15" how stays are secured Nuts & washers working pressure by rules 100 lbs diameter of stays at

smallest part 1 1/2" working pressure by rules 117 lbs Front plates at bottom, thickness 3/8" Back plates, thickness 1/8"

Greatest pitch of stays 13 1/2" working pressure by rules 95 lbs Diameter of tubes 5 1/2" pitch of tubes 5 1/2" x 5 thickness of tube

plates, front 3/8" back 1/2" how stayed 63 stay tubes pitch of stays 13 1/2" and width of water spaces 1 1/2" x 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 *Circular Multitubular with dry combustion chamber*
 Made at *Hull* by whom made *Charles C. Lim* when made *1886* where fixed *Main deck*
 Working pressure *60 lbs* tested by hydraulic pressure to *120 lbs* No. of Certificate *209* fire grate area *22 sq ft* description of safety
 valves *spring loaded* No. of safety valves *one* area of each *9.62* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *8' 0"* length *6' 6"* description of riveting *dbl riv lap*
 Thickness of shell plates *7/16* diameter of rivet holes *13/16* whether punched or drilled *drilled* pitch of rivets *2 1/4"* lap of plating *3 1/4"*
 per centage of strength of joint *70%* thickness of ^{end} crown plates *5/8"* stayed by *4 solid steel stays 1 1/2"* effective *with double butt*
 Diameter of furnace, top *14 1/2"* bottom *14 1/2"* length of furnace *6' 6"* thickness of plates *7/16* description of joint *butt with dbl stays*
 Thickness of furnace crown plates *5/8"* stayed by *stay tubes* working pressure of shell by rules *68 lbs*
 Working pressure of furnace by rules *61 lbs* diameter of uptake tubes *3 1/2"* thickness of plates *7/16* thickness of water tubes

SPARE GEAR. State the articles supplied:—*Two top and two bottom end bolts, two main bearing bolts, one set of coupling bolts, one set of and one set Bilge Valves, Iron propeller blades, Iron studs and nuts for same, One piston rod, One slide Valve spindle, One pair of Eccentric straps and one pair of brass and bolts for same, Two pairs of sink valves, 4 columns, One pump rod fits both air and circulating pumps, One pair top end and one pair bottom end valves, Two safety Valve springs, One boiler tubes & 20 condenser tubes*

The foregoing is a correct description,

Geo. Beatty & Letham

Manufacturer.

The Thompson Manufacturing Company

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

Workmanship Good.

*The Machinery and Boilers of this Vessel have been constructed under Special Survey, and placed onboard 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 Certification * L.M.C. 5-86 in the Register Book.*

*This submitted that this
 case is eligible to have
 L.M.C. 5-86 recorded
 19/6/86*

Accepted 19/6/86

* The amount of Entry Fee .. £ 2 : 0 : 0 received by me,

Special £ 27 : 0 : 0

Donkey Boiler Fee £ 2 : 2 : 0

Certificate (if required) .. £
 To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

Friday, 4th June, 1886.

+ JME

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



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