

REPORT ON MACHINERY

4548

TUESDAY 24 AUGUST 1886

Received at London Office 13

No. 4548

No. in Survey held at Dunbarton

Date, first Survey 6th August Last Survey 15th August 1886

Reg. Book.

(Number of Visits 3)

Tons 1448.46
969.05

on the Paddle Steamer "VENUS"

Master Edwin Pitson Built at Dunbarton By whom built Mr Denny & Brothers When built 1886

Engines made at Dunbarton By whom made Denny & Co when made 1886

Boilers made at Do By whom made Do when made 1886

Registered Horse Power 524 Owners Sa Platense Flotilla Co (L^{td}) Port belonging to Glasgow

ENGINES, &c.—

Description of Engines Compound Diagonal Vertical
Diameter of Cylinders 44" & 87" Length of Stroke 72" No. of Rev. per minute 35 Point of Cut off, High Pressure 52½" Low Pressure 52½"

Diameter of Paddle shaft 15" Diam. of Tunnel shaft — Diam. of Crank shaft journals 14" Diam. of Crank pin 16" size of Crank webs 14 x 13

Diameter of wheel on shaft 21½" Pitch of screw 12½ x 3-6" No. of blades 10 state whether moveable Fixed surface —

No. of Feed pumps Two diameter of ditto 6" Stroke 23½" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two diameter of ditto 6" Stroke 23½" Can one be overhauled while the other is at work Yes

Where do they pump from Engine space bilges, After hold, Forehold.

No. of Donkey Engines Two Size of Pumps 9" x 4" & 12" x 4" & 9" Where do they pump from Main bilge pipe. Fore & aft
also separate suction in engine room. Rea & Hotwell.

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" Are they connected to condenser, or to circulating pump Circulating pipe

How are the pumps worked By levers bolted to cylinders.

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 No Are the blow off cocks fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers Discharge & Exhaust of donkey. How are they protected By deck

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 August 16th 1886

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

BOILERS, &c.—

Number of Boilers Two Description Multitubular cylindrical Whether Steel or Iron Steel
Working Pressure 90 lbs Tested by hydraulic pressure to 180 lbs Date of test May 14th 1886

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 Yes

No. of square feet of fire grate surface in each boiler 144 Description of safety valves Direct springs No. to each boiler Two in single ended
Three in double

Area of each valve 20.6 sq in Are they fitted with easing gear Yes No. of safety valves to superheater — area of each valve —

Are they fitted with easing gear Yes Smallest distance between boilers and bunkers or woodwork 24" Diameter of boilers 15-7¼"

Length of boilers 17-5¼" description of riveting of shell long. seams Butt. double circum. seams Lap. double Thickness of shell plates 15/16"

Diameter of rivet holes 1 3/16" whether punched or drilled Drilled pitch of rivets 4.6 Lap of plating Butt 12 5/8"

Percentage of strength of longitudinal joint 71 working pressure of shell by rules 95 lbs size of manholes in shell 13 x 17"

Size of compensating rings Doubling plate No. of Furnaces in each boiler Three in single ended
Two in double

Outside diameter 49" length, top 6-6" bottom — thickness of plates 9/16" description of joint Butt. if rings are fitted L iron

Greatest length between rings 6-5" working pressure of furnace by the rules 90 lbs combustion chamber plating, thickness, sides ½" back ½" top ½"

Pitch of stays to ditto, sides 8" x 8¼" back 7½" x 8½" top 7¼" x 8" If stays are fitted with nuts or riveted heads Riveted heads working pressure of plating by rules 90 lbs Diameter of stays at smallest part 1¼" & 1½" working pressure of ditto by rules 120 lbs end plates in steam space, thickness 13/16"

Pitch of stays to ditto 15½" x 18" how stays are secured Nut washers working pressure by rules 90 lbs diameter of stays at smallest part 2¼" screw working pressure by rules 90 lbs Front plates at bottom, thickness 3/4" Back plates, thickness 5/8"

Greatest pitch of stays 13 x 7½" working pressure by rules — Diameter of tubes 3½" pitch of tubes 4 3/4" thickness of tube plates, front 11/16" back 11/16" how stayed stayed tubes pitch of stays 16 x 9 1/2" width of water spaces 6"

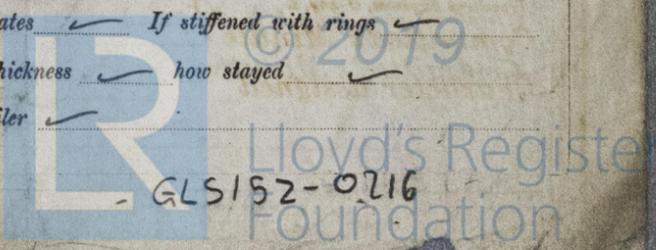
Diameter of Superheater or Steam chest — length — thickness of plates — description of longitudinal joint — diam. of rivet holes —

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 —

Form No. 8-2000-147/M. Transfer 1886



7578 grs

DONKEY BOILER— Description *Flat-sided - Multitubular.*
 Made at *Dumfries* by whom made *Denny & Co* when made *1886* where fixed *Household*
 Working pressure *90 lbs* tested by hydraulic pressure to *130 lbs* No. of Certificate *13.7529 ff* description of safety
 valves *Direct acting spring* No. of safety valves *One* area of each *7 sq in* if fitted with easing gear *Yes* if steam from main boilers can
 enter the donkey boiler *No* diameter of donkey boiler *7-11 x 5-2 1/2* length *7-6 1/2* description of riveting *Lap - double*
 Thickness of shell plates *7/16* diameter of rivet holes *7/8* whether punched or drilled *Drilled* pitch of rivets *3 1/4* lap of plating *4 1/4*
 per centage of strength of joint *70* thickness of ~~end~~ ^{end} plates *5/8* stayed by *2" iron stays - pitch 9 1/2 x 12*
 Diameter of furnace, ^{top} *34"* bottom *-* length of furnace *5-0* thickness of plates *5/8* description of joint *Butt*
 Thickness of ^{wash cham} ~~furnace~~ ^{end} plates *1/2* stayed by *1 3/8 curved stays - 7 1/2 x 7 1/2* working pressure of shell by rules *105 lbs*
 Working pressure of furnace by rules *130 lbs* diameter of ^{water} tubes *3"* thickness of plates *5/8* thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *Two paddle arms & two radius rods fitted with bushes complete*
Six floats, four iron float brackets with pins complete. One piston rod complete with cap bolts &
braces. Two valve spindles, with braces, nuts &c. One quadrant brass. One set of feed pump valves
Two safety valves & spring for main boilers. Two check valves for ditto. Set of springs for each piston. Two sets
of india rubber valves for air circulating pumps.
 The foregoing is a correct description,
Denny & Co Manufacturers.

General Remarks (State quality of workmanship, opinions as to class, &c.) *These Engines & Boilers have*
not been built under Special Survey but on completion the
Owners having desired that a Class be assigned to the boiler
a careful examination has been made over all parts of the
machinery & boilers also the sea cocks, valves, and all connections
examined in dry dock. Appended are Photo Tracings of the
Boilers together with the results of tests of the steel which was
manufactured by the Steel Coy of Scotland & the Clydesdale Coy
The tests of the steel were conducted by one of the Builders
Engineering Staff and it will be observed that they bear a
large proportion to the total number of plates in the boiler
The boilers were tested by Hydraulic pressure
in the usual way to double the working pressure viz 180
per sq inch in the presence of Mr James Denny one of the
builders firm.
The Machinery & Boilers have been tried under steam
at full power in our presence when everything was found
to be satisfactory and in good working condition and we
are of opinion that they are eligible to be noted in the
Register Book **Lloyds M.C. 8.86**

The amount of Entry Fee *£ 3 : - : -* received by me,
 Special *£ 14 : 10 : -*
 Donkey Boiler Fee *£ - : - : -*
 Certificate (if required) *£ - : 5 : -* 23/8/1886
 To be sent as per margin.
 (Travelling Expenses, if any, £ - *8/-*)
 Committee's Minute

James Hollison & Walter Robson
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

TUESDAY 24 AUGUST 1886

Lloyds M.C. 8.86

*Submitted that this
 is eligible to have
 L.M.C. 8.86
 24.8.86*

