

# REPORT ON MACHINERY.

13094

No. 885

No. in Survey held at Sunderland Date, first Survey July 12<sup>th</sup> 1882 Last Survey April 5<sup>th</sup> 1883  
 Reg. Book. Sunderland "Torbay" (Received at London Office Rec'd 3rd MAY 1883)  
 on the Screw Steamer Tons 1414.14  
 Master J. Stevens Built at Sunderland When built 1883  
 Engines made at Sunderland By whom made J. Dickinson when made 1883  
 Boilers made at Q<sup>o</sup> By whom made Q<sup>o</sup> when made do  
 Registered Horse Power 140 Owners Torbay Shipping Coy Port belonging to Brixham

**ENGINES, &c.—**

Description of Engines Inverted Compound Surface Condensing  
 Diameter of Cylinders 31 1/2 58 Length of Stroke 36 No. of Rev. per minute 60 Point of Cut off, High Pressure 2 stroke Low Pressure 2 stroke  
 Diameter of Screw shaft 10 Diameter of Tunnel shaft 9 1/2 Diameter of Crank shaft journals 10 Diameter of Crank pin 10 size of Crank webs 12 1/2 x 7  
 Diameter of screw 13.11 Pitch of screw 16 6 No. of blades 4 state whether moveable not total surface 50 sq ft  
 No. of Feed pumps 2 diameter of ditto 3 3/4 Stroke 19 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 diameter of ditto 3 3/4 Stroke 19 Can one be overhauled while the other is at work yes  
 Where do they pump from one from the bilges of engine room, aft well & fore hold tanks. other one from the bilges of all compartments  
 No. of Donkey Engines two Size of Pumps 9 x 15 stroke Where do they pump from the large one from the bilges of the engine room, aft well & fore hold, tanks & Condenser. Small one from the same places, fore well & 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 1 and sizes 4 dia Are they connected to condenser, or to circulating pump to circulating pump  
 How are the pumps worked by levers from the pistons & crosshead of the after engine  
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves & Cocks  
 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 new  
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from top platform of engine room

**OILERS, &c.—**

Number of Boilers two Description Cylindrical & Multitubular  
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test March 7<sup>th</sup> 1883  
 Description of superheating apparatus or steam chest upright dome  
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately no superheater  
 No. of square feet of fire grate surface in each boiler 38 Description of safety valves Spring by J. Dickinson  
 No. to each boiler 2 area of each valve 11 sq in Are they fitted with casing gear yes  
 No. of safety valves to superheater — area of each valve — are they fitted with casing gear —  
 Smallest distance between boilers and bunkers or woodwork 9"  
 Diameter of boilers 12.3 Length of boilers 10.0 description of riveting of shell long. seams double riv lap circum. seams double riv lap  
 Thickness of shell plates 7/8 diameter of rivet holes 1 1/4 whether punched or drilled drilled pitch of rivets 4 1/2  
 Lap of plating 9" per centage of strength of longitudinal joint 722 working pressure of shell by rules 81 lbs  
 Size of manholes in shell 16 x 12 size of compensating rings neck of dome, double riveted  
 No. of Furnaces in each boiler 2 outside diameter 3.4 length, top 6.6 bottom 4.0  
 Thickness of plates 1/2 x 5/8 bottom description of joint double riv lap if rings are fitted none greatest length between rings —  
 Working pressure of furnace by the rules 80 lbs  
 Combustion chamber plating, thickness, sides 1/2" back 1/2" top 1/2"  
 Pitch of stays to ditto sides 8 x 8 back 8 x 8 top Circular 2 ft rad  
 If stays are fitted with nuts or riveted heads riveted heads working pressure of plating by rules 100 lbs  
 Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 92 lbs  
 End plates in steam space, thickness 3/4" pitch of stays to ditto 15 1/2 x 15 how stays are secured double nuts  
 Working pressure by rules 84 lbs diameter of stays at smallest part 2" working pressure by rules 80 lbs  
 Front plates at bottom, thickness 3/4" Back plates, thickness 3/4" greatest pitch of stays 12 x 8 working pressure by rules 100 lbs

513045-0037



Diameter of tubes  $3\frac{1}{2}$  pitch of tubes  $4\frac{1}{2} \times 4\frac{1}{2}$  thickness of tube plates, front  $\frac{3}{4}$  back  $\frac{3}{4}$   
 How stayed *stay tubes* pitch of stays  $13\frac{1}{2} \times 9$  width of water spaces  $1\frac{1}{4}$   
 Diameter of Superheater or Steam chest  $3\frac{1}{2}$  length  $8\frac{3}{4}$   
 Thickness of plates  $\frac{3}{8}$  description of longitudinal joint *double lap* diameter of rivet holes  $\frac{3}{4}$  pitch of rivets  $2\frac{1}{2}$   
 Working pressure of shell by rules  $96\text{ lbs}$  Diameter of flue *none* thickness of plates  
 If stiffened with rings distance between rings Working pressure by rules  
 End plates of superheater, or steam chest; thickness  $\frac{9}{16}$  How stayed *dished to  $3\frac{1}{2}$  radius*  
 Superheater or steam chest; how connected to boiler *by a neck piece 16 dia  $\times$   $\frac{9}{16}$  thick*

**DONKEY BOILER—** Description *vertical water tubes in furnace*  
 Made at *Harlington* By whom made *J. Shewell & Co* when made *tested 17.1.83*  
 Where fixed *in stokehole* working pressure *Certified 40 lbs* Tested by hydraulic pressure to *140 lbs* No. of Certificate *865*  
 Fire grate area *21 sq ft* Description of safety valves *spring* No. of safety valves *one* area of each *11 sq ins*  
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*  
 Diameter of donkey boiler *6'-0"* length *12'-0"* description of riveting *long seams, lap, dble joint &*  
 thickness of shell plates  $\frac{1}{2}$  diameter of rivet holes  $\frac{13}{16}$  whether punched or drilled *Punched*  
 pitch of rivets  $2\frac{3}{4}$  lap of plating  $4\frac{1}{4}$  per centage of strength of joint *40%*  
 thickness of crown plates  $\frac{1}{2}$  stayed by *stay stays  $1\frac{1}{2}$  dia*  
 Diameter of furnace, top *4'-11"* bottom *5'-5"* length of furnace *6'-0"*  
 thickness of plates  $\frac{7}{16}$  description of joint *Lap single riveted*  
 thickness of furnace crown plates  $\frac{1}{2}$  stayed by *stay stays  $1\frac{1}{2}$  dia*  
 Working pressure of shell by rules  $45\frac{1}{2}\text{ lbs}$  working pressure of furnace by rules  $42\frac{1}{2}\text{ lbs}$   
 diameter of uptake *15* thickness of plates  $\frac{7}{16}$  thickness of water tubes  $\frac{3}{8}$  *See Plan*

The foregoing is a correct description,  
 W. Dickenson Manufacturer. *Except of the Donkey Boiler*

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

The Machinery of this vessel has been constructed under special survey  
 the Materials and workmanship are good and efficient.  
 The Engines and Boilers have been tried under steam, and in  
 my opinion are in good order and safe working condition and  
 eligible for the distinguishing mark **LLOYD'S M.C. 4. 83**  
 in the Register Book of this Society

It is submitted that this vessel is eligible to have the notification + 2nd H. 83 re order 22/5/83

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,  
 Special .. £ 21 : 0 : 0  
 Certificate (if required) .. £ - : - : 30 April 1883  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ )

*William Allison*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute Friday, 4th May, 1883

