

REPORT ON MACHINERY.

(Received in London Office) 18

12681

No. 648
 No. in Survey held at Sunderland & Tyne dock Date, first Survey 17th Sept. 1880 Last Survey 4th Aug. 1881
 Reg. Book. 2634.63
 on the Screw Steamer "Dorset" Tons 175.54
 Master Wm. Stampor Built at Sunderland When built July 1881
 Engines made at Sunderland By whom made G. Clark when made Q^d
 Boilers made at Q^d By whom made Q^d when made Q^d
 Registered Horse Power 300 Owners Great Western Steam Shipping Coy Ltd Port belonging to Bristol

ENGINES, &c.—

Description of Engines Inverted, Compound, Surface Condensing.
 Diameter of Cylinders 40 x 76 Length of Stroke 48 No. of Rev. per minute 56 Point of Cut off, High Pressure 5 stroke Low Pressure 5 stroke
 Diameter of Screw shaft 14 Diameter of Tunnel shaft 13 1/2 Diameter of Crank shaft journals 14 Diameter of Crank pin 14 size of Crank webs 17 x 10 1/2
 Diameter of screw 10.6 Pitch of screw 20.6 No. of blades 4 state whether moveable not total surface 73 sq. feet
 No. of Feed pumps 2 diameter of ditto 4 3/4 Stroke 2 1/2 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 diameter of ditto 4 3/4 Stroke 2 1/2 Can one be overhauled while the other is at work yes
 Where do they pump from The bilges of the Engine room & aft well
 No. of Donkey Engines two Size of Pumps 8 x 10 state 4 x 6 Where do they pump from The large one from the Sea Tanks.
Condenser, & Bilges of engine room & aft well. Small one from same places and 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 4" Are they connected to condenser, or to circulating pump to circulating pump
 How are the pumps worked by levers attached to the crosshead of 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 all 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 apparently, and fitted with a sluice door yes worked from top platform of Engine room

BOILERS, &c.—

Number of Boilers 2 Description Cylindrical, Multitubular, double ended, all steel except rivets & stays
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test 7th May 1881
 Description of superheating apparatus or steam chest Horizontal 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 90 Description of safety valves Spring valves, by G. Clark
 No. to each boiler 2 area of each valve 23.7 sq. ins 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 15"
 Diameter of boilers 13.3" Length of boilers 17.0 description of riveting of shell long. seams double butt double rivet circum. seams double rivet lap
 Thickness of shell plates 13/16 diameter of rivet holes 1 1/32 whether punched or drilled drilled pitch of rivets 4 1/2
 Lap of plating 11 5/8 per centage of strength of longitudinal joint 74 working pressure of shell by rules 98 lbs
 Size of manholes in shell 16 x 13 size of compensating rings 7 x 7 1/8
 No. of Furnaces in each boiler 6 outside diameter 3.1 length, top 6.6 bottom 6.6
 Thickness of plates 1/2" description of joint double butt & single rivet rings are fitted none greatest length between rings —
 Working pressure of furnace by the rules 93 lbs
 Combustion chamber plating, thickness, sides 1/2" back 1/2" top 1/2"
 Pitch of stays to ditto sides 9 1/4 x 9 1/4 back — top 9 1/4 x 9 + Guides
 If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 82 lbs
 Diameter of stays at smallest part 1 3/8 working pressure of ditto by rules 103 lbs
 End plates in steam space, thickness 4 1/2 plates pitch of stays to ditto 18 x 14 how stays are secured nuts
 Working pressure by rules 100 lbs diameter of stays at smallest part 2 1/4 working pressure by rules 92 lbs
 Front plates at bottom, thickness 5 1/8 Back plates, thickness — greatest pitch of stays — working pressure by rules —

Diameter of tubes $3\frac{1}{2}$ pitch of tubes $4\frac{3}{4} \times 4\frac{3}{4}$ thickness of tube plates, front $\frac{3}{16}$ back $\frac{5}{16}$
 How stayed *stay tubes* pitch of stays $9\frac{1}{2} \times 9\frac{1}{2}$ width of water spaces $1\frac{1}{2}$
 Diameter of Superheater or Steam chest $3\cdot6$ length $16\cdot0$
 Thickness of plates $\frac{3}{8}$ description of longitudinal joint *double end lap* diameter of rivet holes $\frac{3}{4}$ pitch of rivets $2\frac{1}{2}$
 Working pressure of shell by rules 123 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 $\frac{3}{8}$ How stayed *spherical, no stays*
 Superheater or steam chest; how connected to boiler *by 2 oval necks $16 \times 11 \times \frac{3}{4}$*

DONKEY BOILER— Description *Upright, Cyl. with 4 Crosstubes*
 Made at *Gateshead in Tyne* By whom made *Carl Chapman & Gurney* when made *tested 24.5.81*
 Where fixed *on deck* working pressure 80 lbs Tested by hydraulic pressure to 160 lbs No. of Certificate 398
 Fire grate area 30 sq ft Description of safety valves *Jumballs spring* No. of safety valves 2 area of each $7\cdot6\text{ sq ins}$
 If fitted with casing gear *yes* If steam from main boilers can enter the donkey boiler *no*
 Diameter of donkey boiler $7\cdot6$ length $14\cdot0$ description of riveting *long beams, double end lap*
 thickness of shell plates $\frac{11}{16}$ diameter of rivet holes 1 whether punched or drilled *punched*
 pitch of rivets $3\frac{5}{16}$ lap of plating $4\frac{1}{2}$ per centage of strength of joint 68
 thickness of crown plates $\frac{11}{16}$ stayed by *10 stays 2" dia*
 Diameter of furnace, top $5\cdot11$ bottom $6\cdot4$ length of furnace $7\cdot0$
 thickness of plates $\frac{9}{16}$ description of joint *lapped & single riveted*
 thickness of furnace crown plates $\frac{9}{16}$ stayed by *10 stays 2" dia*
 Working pressure of shell by rules 85 lbs working pressure of furnace by rules $54\text{ lbs} + \text{screw stay } 13 \times 14 \times 1\frac{1}{2} \text{ dia} = 80\text{ lbs}$
 diameter of uptake $2\cdot0$ thickness of plates $\frac{3}{8}$ thickness of water tubes $\frac{3}{8}$

The foregoing is a correct description,
W. D. Blam *E. L. G.* 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 material and workmanship are good and efficient. The Main Boilers are made of steel, except stays, rivets & tubes. All the Engines and Boilers have been tried under steam and found satisfactory, and in my opinion are in good order and safe working condition, and eligible for the distinguishing mark **LLOYDS M.C.** in the Register Book.*

The tracing of the Main boilers is returned.

Copy of steel tests returned, 17th May 81.

*This certificate is eligible to have the notification of Lloyd's M.C. recorded
 W. D. Blam 15/8/81*

The amount of Entry Fee $\pounds 3 : 0 : -$ received by me, *W. D. Blam*
 Special .. $\pounds 35 : - : -$
 Certificate (if required) .. $\pounds - : - : -$ 5-August 1881.
 To be sent as per margin.
 Travelling Expenses, if any, $\pounds 0 \cdot 5 \cdot 0$ 38-0

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

Committee's Minute Tuesday, August, 16th 1881.

