

REPORT ON MACHINERY.

8336

To. 8335 Port of West Hartlepool Received at London Office FRI. 27 FEB 18 1891
 No. in Survey held at West Hartlepool Date, first Survey 17th Jan 1890 Last Survey 19th Feb 1891
 Reg. Book. _____ (Number of Visits 46)
 on the Steamer "Chatfield" Tons Gross 2931
 Master W. McCre Built at W. Hartlepool By whom built Messrs. Irvine & Co. When built 1891
 Engines made at Hartlepool By whom made Messrs. Richardson & Sons when made 1891
 Boilers made at Hartlepool By whom made Messrs. Richardson & Sons when made 1891
 Registered Horse Power 200 Owners F. Woods Esq. Port belonging to London

ENGINES, &c.—
 Description of Engines Inverted, Triple Expansion, 3 Cranks No. of Cylinders 3
 No. of Cylinders 24, 38, 64 Length of Stroke 42 Rev. per minute 60 Point of Cut off, High Pressure, 5/16 Low Pressure .6 stroke
 Diameter of Screw shaft 11 3/4 Diam. of Tunnel shaft 11 1/4 Diam. of Crank shaft journals 11 3/4 Diam. of Crank pin 12 size of Crank webs 17 1/4 x 7 1/2
 Diameter of screw 17.0 Pitch of screw 17.9 No. of blades 4 state whether moveable no total surface 80 sq. ft.
 No. of Feed pumps 2 diameter of ditto 2 3/4 Stroke 27 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 diameter of ditto 3 3/4 Stroke 27 Can one be overhauled while the other is at work yes
 Where do they pump from Sea & main holds, After well, Engine room, & sea.
 No. of Donkey Engines 2 Size of Pumps (3 1/2 x 7) (10 x 9) Where do they pump from (Ballast tanks, sea, engine room bilges) (Sea, hotwell, main boilers, & all bilges)
 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 dia Are they connected to condenser, or to circulating pump Circulating pump
 How are the pumps worked By levers from the after piston rod crosshead.
 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
 Are all pipes 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
 Have the stern tube, propeller, screw shaft, and all connections examined in dry dock 8th January 1891.

BOILERS, &c.—
 No. of Boilers Two Description Cyl. Mult double ended Material Steel Letter (for record) S.
 Working Pressure 160 lb. Tested by hydraulic pressure to 320 lb. Date of test 16th Oct 1890
 Description of superheating apparatus or steam chest None Heating surface 4105 sq. ft.
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately No superheater
 Area of square feet of fire grate surface in each boiler 63 Description of safety valves Spring No. to each boiler 2
 Diameter of each valve 8.39 in. 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 27" Diameter of boilers 41.6"
 Length of boilers 14.9 description of riveting of shell long. seams double butt strap circum. seams double lap Thickness of shell plates 1"
 Diameter of rivet holes 1 1/2 whether punched or drilled drilled pitch of rivets 1 1/4, 2 in 3/8 Lap of plating 8 1/4
 Percentage of strength of longitudinal joint 80.7 working pressure of shell by rules 161 lb. size of manholes in shell 16 3/8 x 13
 No. of compensating rings 2.6 x 2.3 x 1 No. of Furnaces in each boiler 4 Description of Furnaces Corrugated
 Diameter of rings 3.4 length 5.6 between 6.0 thickness of plates 17/32 description of joint welded if rings are fitted no
 Smallest length between rings _____ working pressure of furnace by the rules 162 lb. combustion chamber plating, thickness, sides 5/8 back _____ top 5/8
 No. of stays to ditto, sides 8 1/2 x 8 1/2 back _____ top 8 1/2 x 8 1/2 If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 161 lb.
 Diameter of stays at smallest part 1 3/8 working pressure of ditto by rules 162 lb. end plates in steam space, thickness 1 1/16
 No. of stays to ditto 15 1/2 x 15 1/2 how stays are secured double nuts & washers working pressure by rules 160 lb. diameter of stays at smallest part 2 3/8
 working pressure by rules 162 lb. Front plates at bottom, thickness 1/16 Back plates, thickness _____
 Smallest pitch of stays _____ working pressure by rules _____ Diameter of tubes 3 in. pitch of tubes 4 1/4 x 4 1/8 thickness of tube _____
 Diameter of tubes, front _____ back 1 3/16 how stayed stay tubes pitch of stays 12 3/4 x 12 3/8 width of water spaces 1 1/4
 Diameter of Superheater or Steam chest _____ length _____ thickness of plates _____ description of longitudinal joint _____ diam. of rivet holes _____
 No. of rivets _____ working pressure of shell by rules _____ diameter of flue _____ thickness of plates _____ If stiffened with rings _____
 Smallest distance between rings _____ working pressure by rules _____ end plates of superheater, or steam chest; thickness _____ how stayed _____
 Superheater or steam chest; how connected _____

2 DONKEY BOILER—*S* Description *Vertical, Cylindrical, 3 Cross tubes, (Steel)*
 Made at *Stockton* by whom made *Messrs Riley Bros.* when made *11.11.90* where fixed *In state*
 Working pressure *80lb.* tested by hydraulic pressure to *160lb.* No. of Certificate *149* fire grate area *1709. ft.* description
 valves *Spring* No. of safety valves *Three* area of each *11.04* if fitted with easing gear *yes* if steam from main boiler
 enter the donkey boiler *no* diameter of donkey boiler *5.6"* length *11.6"* description of riveting *Double riv^d lap*
 Thickness of shell plates *3/8"* diameter of rivet holes *13/16"* whether punched or drilled *punched* ^{unsmoothed} pitch of rivets *2 1/2"* lap of plating *4*
 per centage of strength of joint *71.1* thickness of crown plates *3/8"* stayed by *6 stays 1 1/2" effe dia.*
 Diameter of furnace, top *4.5"* bottom *4.11"* length of furnace *4.5"* thickness of plates *9/16"* description of joint *single riv^d lap*
 Thickness of furnace crown plates *1/2"* stayed by *6 stays 1 1/2" dia* working pressure of shell by rules *80lb.*
 Working pressure of furnace by rules *80lb.* diameter of uptake *13"* thickness of plates *1/16"* thickness of water tubes *3/8"*
as reported by W.P.C.

SPARE GEAR. State the articles supplied:— *One propeller, A set of bolts & nuts for a connecting rod, main bearing, and shaft coupling. A set of valves for a feed pump. A set of piston springs, Bolts, nuts, & Iron wire.*

The foregoing is a correct description,
J. H. W. Jones Manufacturer. of Engines & main boilers

General Remarks (State quality of workmanship, opinions as to class, &c.)
Main steam pipes tested by hydraulic pressure to 320lb. per square inch and found tight.
The engines and boilers of this vessel have been constructed under Special Survey and of a good quality of workmanship they have been tried under steam, the safety valves adjusted, and found to work well, and are now in safe and efficient working condition and, in my opinion, eligible to have
⊕ L.M.C. 2.91. recorded in the Register of this Society.

It is submitted that this vessel is eligible to have ⊕ L.M.C. 2.91 recorded W.D. 27-2-91

[Large blue handwritten signature]

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,
 Special .. £ 33 : 9 : 0
 Donkey Boiler Fee .. £ : :
 Certificate (if required) .. £ *Grates* 26.2.1891.
 (To be sent as per margin.)
 (Travelling Expenses, if any, £)

G. Stoddart
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *TUES 3 MARCH*
+ L. H. W. Jones

