

# REPORT ON MACHINERY.

THURS. 23 APR 1891

No. 25681 Port of Liverpool Received at London Office 18  
 No. in Survey held at Liverpool Date, first Survey 23<sup>rd</sup> Sept 190 Last Survey 20<sup>th</sup> April 1891  
 Reg. Book. S. S. "Eiffel Tower" (Number of Visits 27)  
 on the S. S. "Eiffel Tower" Tons { Gross 3184.41 Net 2062.75  
 Master Woods Built at Liverpool By whom built H. Dobson & Co When built 1891  
 Engines made at Liverpool By whom made Walsland Shipway Co Ltd when made 1891  
 Boilers made at do By whom made do when made 1891  
 Registered Horse Power 220 Owners J. Sturrock & Co Port belonging to Liverpool

## ENGINES, &c.—

Description of Engines Triple Expansion Surface Condensing No. of Cylinders 3  
 Diam. of Cylinders 23, 38 & 61 Length of Stroke 42 Rev. per minute 60 Point of Cut off, High Pressure .67 Low Pressure .69  
 Diameter of Screw shaft 11 1/2 Diam. of Tunnel shaft 11 Diam. of Crank shaft journals 11 1/2 Diam. of Crank pin 11 1/2 size of Crank webs 8 x 14  
 Diameter of screw 16.0 Pitch of screw 14.0 No. of blades 4 state whether moveable no total surface 68.5  
 No. of Feed pumps 2 diameter of ditto 3 1/2 Stroke 24 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work yes  
 Where do they pump from Sea from hot well. Bilge from tanks, holds. Engine space. after well  
 No. of Donkey Engines 2 Size of Pumps 6 x 4.6 & 6 x 8.6 Where do they pump from Hot well. Tanks. holds. engine space. after 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 Are they connected to condenser, or to circulating pump Circulating pump  
 How are the pumps worked Levers over Centres engine  
 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 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 vessel  
 Is the screw shaft tunnel watertight - and fitted with a sluice door yes worked from Upper platform

## OILERS, &c.—

No. of Boilers 2 Description Cylindrical Simple Material Steel Letter (for record) -  
 Working Pressure 100 Tested by hydraulic pressure to 320 Date of test 14.2.91. H. G. C. 3404  
 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 -  
 No. of square feet of fire grate surface in each boiler 60 Description of safety valves Spring No. to each boiler 2  
 Area of each valve 7.04 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 14" Diameter of boilers 14.6"  
 Length of boilers 10.3" description of riveting of shell long. seams B.P. tubular circum. seams Lap double Thickness of shell plates 1 3/4"  
 Diameter of rivet holes 1 3/4" whether punched or drilled drilled pitch of rivets 8 1/2" Lap of plating 18 1/2"  
 Per centage of strength of longitudinal joint 84.9 working pressure of shell by rules 162.4 size of manholes in shell 16 x 12"  
 Size of compensating rings 8 x 1 3/4" No. of Furnaces in each boiler 3 Description of Furnaces Conjugated  
 Outside diameter 3.6 1/2 length 6.6 thickness of plates 9/16" description of joint welded if rings are fitted -  
 Greatest length between rings - working pressure of furnace by the rules 164.7 combustion chamber plating, thickness, sides 5/8 back 5/8 top 5/8  
 Pitch of stays to ditto, sides 8 1/2" back 8 1/2" top 8 1/2" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 166 Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 164 end plates in steam space, thickness 1 3/4"  
 Pitch of stays to ditto 18 1/2" = 15 1/2" how stays are secured By Washers working pressure by rules 160 diameter of stays at smallest part 2 1/4" & 2 1/2" working pressure by rules 160 Front plates at bottom, thickness 1 1/2" Back plates, thickness 1 1/2"  
 Greatest pitch of stays 12" working pressure by rules 160 Diameter of tubes 3 1/4" pitch of tubes 4 1/2" thickness of tube plates, front 3/8" back 3/4" how stayed Tubes pitch of stays - width of water spaces 6"  
 Diameter of Superheater or Steam chest none 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 -

NWC 819 - 0043

Report nos 22419 sent to 27/4/91

**DONKEY BOILER**— Description *vertical four crop tubes*  
 Made at *Gateshead* by whom made *Blake Chapman & Co* when made *1889* where fixed *Stockholm*  
 Working pressure *80 lb* tested by hydraulic pressure to *160* No. of Certificate *3489* fire grate area *20* description of safety  
 valves *Spring* No. of safety valves *1* area of each *11.0 sq ft* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *6.0* length *13.0* description of riveting *Lap double*  
 Thickness of shell plates *3/16* diameter of rivet holes *3/8* whether punched or drilled *drilled* pitch of rivets *3 3/16* lap of plating *4 1/4*  
 per centage of strength of joint *72* thickness of crown plates *3/16* stayed by *6 stay 1 3/4" off diam*  
 Diameter of furnace, top *4.8* bottom *5.1* length of furnace *5.3* thickness of plates *3/16* description of joint *Lap Single*  
 Thickness of furnace crown plates *1/2* stayed by *Same as shell crown* working pressure of shell by rules *90*  
 Working pressure of furnace by rules *80* diameter of uptake *15* thickness of plates *3/16* thickness of water tubes *3/8*

**SPARE GEAR.** State the articles supplied:— *2 Main bearing bolts & nuts. 2 Top end bolts &*  
*nuts. 2 bottom end bolts & nuts. 1 Set of Shaft Coupling bolts & nuts*  
*propeller. propeller shaft. 1 Set of feed valves. 1 Set of bilge valves*  
*nuts & bolts various assorted.*

The foregoing is a correct description,  
 FOR THE WALLSEND SLIPWAY & ENGINEERING CO., LF  
 Manufacturer.  
*April 2/91 W. Boyd Director*

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The machinery has been*  
*Specially Surveyed during construction the material and*  
*workmanship good and renders the vessel eligible in my*  
*opinion to have the Record + L.M.C. H. 91 in the Register*  
*Book of the Society.*

*Heating Surface in (2) Boilers = 40000 sq*  
*T.A.P. as per Rules = 255 H.P.*

*It is submitted that this vessel is*  
*eligible to have + L.M.C. 491 rounded*  
*W.A. 23 4-91*

*Richard Hirst*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Ship

The amount of Entry Fee *£ 27/7* received by me,  
 Special .. .. £ 3/5 :-  
 Donkey Boiler Fee .. .. £ - :-  
 Certificate (if required) .. £ gratis: *24/4/1891*  
 (Travelling Expenses, if any, £ .. .. )  
 Committee's Minute *the inst. 4/91*

