

# REPORT ON MACHINERY.

No. 343

Received at London Office

No. in Survey held at Dundee Date, first Survey 20/12/83 Last Survey 10<sup>th</sup> July 1884  
 Reg. Book. on the SS "Dresden" (Number of Visits 441.85) Tons 844.94  
 Master Ayre Built at Dundee By whom built W. B. Thompson When built 1884  
 Engines made at Dundee By whom made W. B. Thompson when made 1884  
 Boilers made at Dundee By whom made W. B. Thompson when made 1884  
 Registered Horse Power 150 Owners Yorkshire Coal & Steam Ship Co. (Limited) Port belonging to Goole

**ENGINES, &c.—**

Description of Engines Direct acting Compound 2nd. Cys Surface Condensing  
 Diameter of Cylinders 30" x 60" Length of Stroke 33" No. of Rev. per minute 80 Point of Cut off, High Pressure 2 1/2" Low Pressure 20 1/2"  
 Diameter of Screw shaft 10" Diam. of Tunnel shaft 9 3/4" Diam. of Crank shaft journals 10" Diam. of Crank pin 10" size of Crank webs 7" x 11 1/2"  
 Diameter of screw 12 1/2" Pitch of screw 16 1/2" No. of blades 4 state whether moveable not total surface 49 feet  
 No. of Feed pumps Two diameter of ditto 3 1/2" Stroke 23" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps Two diameter of ditto 3 1/2" Stroke 23" Can one be overhauled while the other is at work Yes  
 Where do they pump from all compartments  
 No. of Donkey Engines Two Size of Pumps 10" x 12" x 9" 6" x 8 1/2" x 3 1/2" Where do they pump from Forward compartments & Condenser & Ship side. from sea Hotwell all compartments to boilers thro ship side & on deck  
 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 Circulating  
 How are the pumps worked by levers from after 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 before being launched  
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Top of Cylinders

**BOILERS, &c.—**

Number of Boilers Two Description Circular Tubular Whether Steel or Iron Steel & iron stays  
 Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs Date of test 19<sup>th</sup> June 1884  
 Description of ~~superheating apparatus~~ or steam chest Horizontal chest  
 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 47 feet Description of safety valves Direct Spring 2 No. to each boiler Two  
 Area of each valve 12.56" 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 9" Diameter of boilers 13.0"  
 Length of boilers 9' 9" description of riveting of shell long. seams Lap & double R circum. seams Lap & R Thickness of shell plates 15 1/16"  
 Diameter of rivet holes 1 5/16" whether punched or drilled drilled pitch of rivets 5" Lap of plating 9" x 6 1/2"  
 Per centage of strength of longitudinal joint 73.71% working pressure of shell by rules 101 lbs size of manholes in shell 17" x 13"  
 Size of compensating rings angle 4" x 4" x 3 1/2" No. of Furnaces in each boiler Three  
 Outside diameter 36" length, top 7' 0" bottom 7' 0" thickness of plates 9/16" description of joint butt S. R. if rings are fitted Yes  
 Greatest length between rings — working pressure of furnace by the rules 109 1/4 combustion chamber plating, thickness, sides 9/16" back 9/16" top 9/16"  
 Pitch of stays to ditto, sides 8 1/2" x 8 1/2" back 9" x 9" top 10" x 8 1/2" If stays are fitted with nuts or riveted heads Nuts both ends working pressure of plating by rules 120 1/4 Diameter of stays at smallest part 1 1/2" B.T. working pressure of ditto by rules 476 1/4 end plates in steam space, thickness 9/16"  
 Pitch of stays to ditto 16" x 15" how stays are secured Two ends nuts working pressure by rules 131 lbs diameter of stays at smallest part 2 1/2" working pressure by rules 489 1/4 Front plates at bottom, thickness 4/16" Back plates, thickness 4/16"  
 Greatest pitch of stays — working pressure by rules — Diameter of tubes 3 1/2" pitch of tubes 5" x 5" thickness of tube plates, front 4/16" back 4/16" how stayed Subsidiary pitch of stays 10" x 10" width of water spaces 1 1/2"  
 Diameter of ~~Superheater~~ or Steam chest 3' 6" length 8' 0" thickness of plates 3/8" description of longitudinal joint Lap & R diam. of rivet holes 7/8"  
 Pitch of rivets 3 1/2" working pressure of shell by rules 132 1/4 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 4 bolts  
Rolls 2 1/2" diameter Superheater or steam chest; how connected to boiler by two malleable necks riveted

**DONKEY BOILER**— Description *one Round Vertical two cross tubes*  
 Made at *Gatehead* by whom made *Clark Chapman & Co* when made *1884* where fixed *Stoke Newington*  
 Working pressure *60 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *1699* fire grate area *19 feet* description of safety  
 valves *Direct Spring load* No. of safety valves *one* area of each *9.625* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *6' 0"* length *10' 0"* description of riveting *Tap double R*  
 Thickness of shell plates *3/8"* diameter of rivet holes *3/4"* whether punched or drilled *Punched* pitch of rivets *3"* lap of plating *3 3/4"*  
 per centage of strength of joint *75%* thickness of crown plates *9/16"* stayed by *5 bolts 1 3/8" dia thro top of boiler furnace*  
 Diameter of furnace, top *4' 8"* bottom *5' 1/2"* length of furnace *4' 10 1/2"* thickness of plates *9/16"* description of joint *Single lap*  
 Thickness of furnace crown plates *1/2"* stayed by *as above* working pressure of shell by rules *60 lbs*  
 Working pressure of furnace by rules *73 lbs* diameter of uptake *15"* thickness of plates *7/16"* thickness of water tubes *3/8"*

**SPARE GEAR.** State the articles supplied:— *Half Crank Shaft, Two Top & Bottom end connecting  
 nut bolts, Two main bearing bolts, 5 Coupling bolts, one set piston springs  
 one set each Feed & bilge pump valves, one Propeller set of bolts assorted  
 bolts a steel iron assorted 18 bricen tubes & C & C*  
 The foregoing is a correct description,  
 Manufacturer. *W. B. Thompson*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The Engines & Boilers of this vessel  
 have been built under special survey, the material & workmanship  
 are of the best description.*  
*Both engines & boilers have been tested under steam and the  
 safety valves set to 100 lbs per square inch working pressure, and in  
 my opinion all are in good & safe working order, and eligible to be  
 entered into the Register Book with the distinctive mark*

**LMC. 784**

*This vessel is eligible to have  
 notification of LMC 784  
 recorded*

*7/5/84*

The amount of Entry Fee £ 2 : 0 : 0 received by me,  
 Special .. £ 22 : 10 : 0  
 Donkey Boiler Fee .. £ : :  
 Certificate (if required) .. £ : : *28th July 1884*  
 (To be sent as per margin.)  
 (Travelling Expenses, if any, £ ..)

*J. S.*

*John Sturrock*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
 Dundee District

Committee's Minute **TUESDAY 5 AUGUST 1884**

