

# REPORT ON MACHINERY.

5319

No. 5319 (Received in London Office Rec'd 12th July 1883)  
 No. in Survey held at Hull Date, first Survey Dec<sup>r</sup> 18/82 Last Survey 30 May 1883  
 Reg. Book. 824 on the iron Steam Ship 'Annie' Tons 274  
 Master Spinks Built at Hull When built 1864  
 Engines made at Hull By whom made M. Samuelson when made 1870  
 Boilers made at Hull By whom made Carlisle when made 1882  
 Registered Horse Power 98 Owners Goole Steam Ship Co Port belonging to Goole

**ENGINES, &c.—**

Description of Engines Vertical inverted, Compound & Surface Condensing  
 Diameter of Cylinders 21 1/4" & 27 1/2" Length of Stroke 24" No. of Rev. per minute \_\_\_\_\_ Point of Cut off, High Pressure \_\_\_\_\_ Low Pressure \_\_\_\_\_  
 Diameter of Screw shaft 8 5/8" Diameter of Tunnel shaft 8 1/2" Diameter of Crank shaft journals 7 1/2" Diameter of Crank pin 7 1/2" size of Crank 2 1/2" x 12"  
 Diameter of screw 10.6" Pitch of screw 15.0" No. of blades 4 state whether moveable No total surface \_\_\_\_\_  
 No. of Feed pumps 2 diameter of ditto 4 1/2" & 4 1/4" Stroke 12" Can one be overhauled while the other is at work No  
 No. of Bilge pumps 2 diameter of ditto 4 1/2" Stroke 12" Can one be overhauled while the other is at work Yes  
 Where do they pump from off well, engine room & main hold  
 No. of Donkey Engines one Size of Pumps 4" x 8" Where do they pump from Sea & engine room bilge with  
delivery to deck, overboard boiler & condenser.  
 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 No  
 No. of bilge injections one and sizes 3" Are they connected to condenser, or to circulating pump Circulating pump  
 How are the pumps worked By rocking lever from piston rod crosshead  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Locks  
 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 Below  
 Are they each fitted with a discharge valve always accessible on the plating of the vessel Cir. only Are the blow off cocks fitted with a spigot and brass covering plate Yes  
 What pipes are carried through the bunkers Donkey discharge & exhaust steam How are they protected wood casing  
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes in E.C. Room  
 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 7 Feb 83  
 Is the screw shaft tunnel watertight No and fitted with a sluice door No worked from \_\_\_\_\_

**BOILERS, &c.—**

Number of Boilers one Description Circular, multitubular of ordinary marine type  
 Working Pressure app<sup>r</sup> to 85 lb Tested by hydraulic pressure to 170 lb Date of test 9<sup>th</sup> Oct. 82  
 Description of superheating apparatus or steam chest none fitted  
 Can each boiler be worked separately X Can the superheater be shut off and the boiler worked separately X  
 No. of square feet of fire grate surface in each boiler 58 Description of safety valves Spring loaded  
 No. to each boiler 2 area of each valve 19.63 sq. in. Are they fitted with easing gear Yes  
 No. of safety valves to superheater X area of each valve X are they fitted with easing gear X  
 Smallest distance between boilers and bunkers or woodwork 6 inches  
 Diameter of boilers 15.3' Length of boilers 10.0' description of riveting of shell long. seams abreast butts with circum. seams abreast laps  
 Thickness of shell plates 1 3/8" diameter of rivet holes 1 5/8" whether punched or drilled drilled pitch of rivets Long. 5 1/4"  
 Lap of plating 13 straps per centage of strength of longitudinal joint 68 working pressure of shell by rules 88 lb  
 Size of manholes in shell 10' x 12' size of compensating rings 28' x 24' x 1 1/8"  
 No. of Furnaces in each boiler 3 outside diameter 47" length, top 7.0' bottom 9.4'  
 Thickness of plates 1/2" description of joint welded if rings are fitted Yes greatest length between rings 4.7'  
 Working pressure of furnace by the rules 100 lb / 47" = 85 lb  
 Combustion chamber plating, thickness, sides 1/2" back 1/2" top 1/2"  
 Pitch of stays to ditto sides 9.6 x 9.1 x 8.6 7/8" back 7.8 to 9 1/2" top 8 1/2 to 9"  
 If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 85 lb (top)  
 Diameter of stays at smallest part 1 5/16" working pressure of ditto by rules 106 lb  
 End plates in steam space, thickness 7/8" pitch of stays to ditto 17' x 15 1/2" how stays are secured at the nut on shell  
 Working pressure by rules 95 lb diameter of stays at smallest part 2 1/2" working pressure by rules 160 lb  
 Front plates at bottom, thickness 1 1/16" Back plates, thickness 1 1/16" greatest pitch of stays 12" working pressure by rules 160 lb

Form No. 8, 2000-310 (9)



Diameter of tubes  $3\frac{1}{2}$  pitch of tubes  $4\frac{1}{4}$  thickness of tube plates, front  $3\frac{1}{4}$  back  $3\frac{1}{4}$   
 How stayed *Stay tubes as appended* pitch of stays  $1\frac{1}{2} \times 9\frac{1}{4}$  width of water spaces  $1\frac{1}{4}$   
 Diameter of Superheater or Steam chest \_\_\_\_\_ length \_\_\_\_\_  
 Thickness of plates \_\_\_\_\_ description of longitudinal joint \_\_\_\_\_ diameter 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 \_\_\_\_\_

**DONKEY BOILER**— Description *Not new - circular vertical with internal flue*  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_ when made \_\_\_\_\_  
 Where fixed *on deck* working pressure *45 lb.* Tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_  
 Fire grate area \_\_\_\_\_ Description of safety valves *dead load* No. of safety valves *one* area of each *6.5 sq. in.*  
 If fitted with easing gear *no* If steam from main boilers can enter the donkey boiler *yes (see sketch)*  
 Diameter of donkey boiler \_\_\_\_\_ length \_\_\_\_\_ description of riveting \_\_\_\_\_  
 thickness of shell plates \_\_\_\_\_ diameter of rivet holes \_\_\_\_\_ whether punched or drilled \_\_\_\_\_  
 pitch of rivets \_\_\_\_\_ lap of plating \_\_\_\_\_ per centage of strength of joint \_\_\_\_\_  
 thickness of crown plates \_\_\_\_\_ stayed by \_\_\_\_\_  
 Diameter of furnace, top \_\_\_\_\_ bottom \_\_\_\_\_ length of furnace \_\_\_\_\_  
 thickness of plates \_\_\_\_\_ description of joint \_\_\_\_\_  
 thickness of furnace crown plates \_\_\_\_\_ stayed by \_\_\_\_\_  
 Working pressure of shell by rules \_\_\_\_\_ working pressure of furnace by rules \_\_\_\_\_  
 diameter of uptake \_\_\_\_\_ thickness of plates \_\_\_\_\_ thickness of water tubes \_\_\_\_\_

The foregoing is a correct description,

EARLE'S SHIPBUILDING & ENGINEERING COY. LIMITED Manufacturers of the main Boiler

*J. H. Woodcock*

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

*Now done. New main Boiler (made in 1892) with all necessary fittings placed in the ship.*

*Engines overhauled throughout & put in good working order. A new high pressure Expander with piston slide valve & complete new brass liner in air pump & bucket turned to fit & repacked. Circulating pump & all foot head valves overhauled. Feed & Bilge pumps overhauled & valves made good as required. Pumping arrangements overhauled & a suction fitted, to pump by the bilge pump from main hold. Crank shaft stripped & found in safe working condition. Tail shaft drawn, found good & a new cast iron bush fitted in the stern tube. Bilge injection overhauled. Air Sea cocks overhauled (done at anchor). Safety valves set under steam to working pressure. Engines tried at morning. Donkey Engine repaired & put in good order. Donkey Boiler examined & thickness of plates when drilled found satisfactory. New seat to safety valve same.*

*The workmanship done is good. This vessel is not fitted with valves at the ship's side for the discharge of the donkey engine & Bilge pumps. Two of these pipes being down the dead load line. I forward herewith a letter from the Ship Engineer for the Owners relative to this subject, and instead of the promise contained therein to fit these valves at the first opportunity, I beg to submit the case for your consideration.*

The amount of Entry *100* £ : : received by me, with a view to the notification L.M.C. 5.83. + N.B 82  
 Special *100* £ 4 : 7 : Paid Keel letter 1/8/93 in the Register Book  
 Certificate (if required) .. £ : 2 : 6 18  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ 1.0.6.)

*John Betts*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

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*J. H. Woodcock* L.M.C. 5.83 + N.B 82  
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The photo-plate copy of boiler is preserved for forward.