

REPORT ON MACHINERY.

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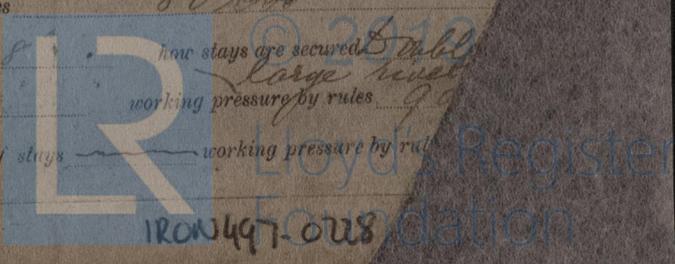
No. 4916 Received in London Office 30/12/1880
 No. in Survey held at Port Glasgow & Greenock Date, first Survey Feb 6th 1880 Last Survey Dec 28 1880
 Reg. Book. 1326
 on the Iron Screw Steamer "Advance" Tons 881
 Master Prout Built at Port Glasgow When built 1880
 Engines made at Greenock By whom made Parker & Blackmore when made 1880
 Boilers made at Greenock By whom made Parker & Blackmore when made 1880
 Registered Horse Power 150 Owners J. R. Thompson & Co. Port belonging to Cardiff.

ENGINES, &c.—

Description of Engines Compound, Inverted, Direct Acting, Surface Condensing
 Diameter of Cylinders 29" & 58" Length of Stroke 36" No. of Rev. per minute 40 Point of Cut off, High Pressure 9/16 stroke Low Pressure None
 Diameter of Screw shaft 10 1/4" Diameter of Tunnel shaft 9 1/2" Diameter of Crank shaft journals 10 1/4" Diameter of Crank pin 10 1/4" size of Crank webs 11 3/4" x 6 1/2"
 Diameter of screw 14" 0" Pitch of screw 15" 0" No. of blades 4 state whether moveable Yes total surface not ascertained
 No. of Feed pumps 2 diameter of ditto 4" Stroke 18" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 diameter of ditto 4" Stroke 18" Can one be overhauled while the other is at work Yes
 Where do they pump from All compartments
 No. of Donkey Engines 2 Size of Pumps One 8" x 9" One 4 1/2" x 9" Where do they pump from Ballast pumps from Ballast Tanks & Bilges. Feed engine from Hotwell, Sea & 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 1 and sizes 3 1/2" Are they connected to condenser, or to circulating pump Circulating pump
 How are the pumps worked By levers from L.P. crosshead.
 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 Main just below, rest 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 None
 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 ship before launched, & Dec. 1879
 Is the screw shaft tunnel watertight Fitted with gland & stuffing box to shaft and fitted with a sluice door Yes worked from top of E. Room.

BOILERS, &c.—

Number of Boilers One Description Round, Horizontal, double ended.
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test Sept. 15th 1880
 Description of superheating apparatus or steam chest None
 Can each boiler be worked separately None Can the superheater be shut off and the boiler worked separately None
 No. of square feet of fire grate surface in each boiler 48 sq. ft. Description of safety valves Direct spring, four make
 No. to each boiler Two area of each valve 23.7 sq. inches. Are they fitted with easing gear Yes
 No. of safety valves to superheater None area of each valve None are they fitted with easing gear None
 Smallest distance between boilers and bunkers or woodwork About 4" to bunker sides, no wood
 Diameter of boilers 18" 9" Length of boilers 15' 6" description of riveting of shell long. seams Triple lap circum. seams Double lap
 Thickness of shell plates 1" diameter of rivet holes 1 7/16" whether punched or drilled Punched pitch of rivets 4 1/8"
 Lap of plating 9" per centage of strength of longitudinal joint 73 working pressure of shell by rules 81 lbs
 Size of manholes in shell 16" x 11 1/2" size of compensating rings 6" x 1"
 No. of Furnaces in each boiler Four outside diameter 3' 11" length, top 6' 0" bottom Whole length of boiler
 Thickness of plates 9/16" description of joint Double strap if rings are fitted Angle iron greatest length between rings 6' 0"
 Working pressure of furnace by the rules 100 lbs
 Combustion chamber plating, thickness, sides 1/2" back None top 1/2" full
 Pitch of stays to ditto None sides 8 3/4" x 8 1/2" back None top Guides 9 3/4" x 8"
 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 101 lbs
 Diameter of stays at smallest part 1 1/8" bottom of head working pressure of ditto by rules 80 lbs
 End plates in steam space, thickness 2 5/32" pitch of stays to ditto 18" x 18" how stays are secured Double large nut
 Working pressure by rules 44 lbs diameter of stays at smallest part 2 1/2" working pressure by rules 90
 Front plates at bottom, thickness 3/4" Back plates, thickness 3/4" greatest pitch of stays None working pressure by rules None



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Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{1}{2}$ " thickness of tube plates, front $1\frac{1}{16}$ " back $1\frac{1}{16}$ "
 How stayed Tubes pitch of stays $1\frac{3}{8}$ " x $1\frac{3}{8}$ " width of water spaces 6 " 12 " between tubes
 Diameter of Superheater or Steam chest none 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 *Round vertical, class tubes.*
 Made at *Greenock* By whom made *R. Steele* when made *1880*
 Where fixed *In stockhold* working pressure *50 lbs* Tested by hydraulic pressure to *100 lbs* No. of Certificate *28*
 Fire grate area *19 sq ft.* Description of safety valves *Direct spring* No. of safety valves *2* area of each *40"*
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*
 Diameter of donkey boiler *16" 40"* length *11' 2"* description of riveting *Double laps*
 thickness of shell plates *3/8"* diameter of rivet holes *13/16"* whether punched or drilled *Punched*
 pitch of rivets *3"* lap of plating *3 3/4"* per centage of strength of joint *93*
 thickness of crown plates *4/16"* stayed by *Dished, uptake & by four vertical stays*
 Diameter of furnace, top *4' 10"* bottom *5' 2"* length of furnace *5' 10"*
 thickness of plates *4/16"* description of joint *Laps*
 thickness of furnace crown plates *4/16"* stayed by *Dished, uptake & four vertical stays*
 Working pressure of shell by rules *58 lbs* working pressure of furnace by rules *58 lbs (5000 x T / D)* stayed by *12 80*
 diameter of uptake *14"* thickness of plates *4/16"* thickness of water tubes *4/16"*

The foregoing is a correct description.

Rankin & Blackmore Manufacturers.

General Remarks (State quality of workmanship, opinions as to class, &c. *Workmanship & materials good*)
The Engines and Boilers have been carefully inspected by me during construction; they are now in good and efficient condition, eligible in my opinion to be classed "LLOYD'S M.C." and to be noted "12 80"

The machinery of the engine has been examined and found to be in good order. The boiler is also in good order. The engine is to be classed "LLOYD'S M.C." and to be noted "12 80".

Amount of Entry Fee .. £ *3 : 0 : 0* received by me, *[Signature]*
 Special £ *22 : 10 : 0*
 Certificate (if required) .. £ *0 : 0 : 0* *46 Dec 1880*
 To be sent as per margin. *225 : 10 : 0*
 Expenses, if any, £

Alfred H. Alcock
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Meeting's Minute Friday, December 31st, 1880.

Lloyd's Register



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