

REPORT ON MACHINERY.

No. 4940

(Received in London Office 7/8/81 18)

No. in Survey held at Port Glasgow & Greenock Date, first Survey August 30th 1880 Last Survey March 2nd 1881
Reg. Book. 1534.88
on the Iron Screw Steamer "James Watt" Tons 1023.5.

Master Rieppenhansen Built at Port Glasgow When built 1881
Engines made at Greenock By whom made Rankin & Blackmore when made 1881
Boilers made at Greenock By whom made Rankin & Blackmore when made 1881
Registered Horse Power 160 Owners Messrs. Leitch & Muir Port belonging to Greenock.

ENGINES, &c.—

Description of Engines Compound, Inverted, Direct-Acting, Surface Condensing
Diameter of Cylinders 31" & 62" Length of Stroke 39" No. of Rev. per minute 40 off Point of Cut off, High Pressure 78 stroke Low Pressure 78 stroke
Diameter of Screw shaft 11" Diameter of Tunnel shaft 10" Diameter of Crank shaft journals 11" Diameter of Crank pin 11" size of Crank webs 13 1/2" x 7 1/2"
Diameter of screw 15.0" Pitch of screw 16.0" No. of blades 4 state whether moveable Yes total surface Not ascertained
No. of Feed pumps 2 diameter of ditto 4" Stroke 25" Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 diameter of ditto 4" Stroke 25" Can one be overhauled while the other is at work Yes
Where do they pump from Bilge pumps from all bilges
No. of Donkey Engines 2 Size of Pumps 8" x 9" & 3 1/2" x 8" Where do they pump from Ballast pumps from ballast tanks and sea, feed donkey from bilges and 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 Not at all
No. of bilge injections 1 and sizes 3 1/2" Are they connected to condenser, or to circulating pump Circulating
How are the pumps worked By levers from crossheads.
Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Valves and 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 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 ship, before being launched.
Is the screw shaft tunnel watertight Fitted with a stuffing box to shaft Yes worked from Top of E. Room.

BOILERS, &c.—

Number of Boilers One Description Round, horizontal, cylindrical, double-ended.
Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test Feb'y 8th, 1881.
Description of superheating apparatus or steam chest None
Can each boiler be worked separately Can the superheater be shut off and the boiler worked separately
No. of square feet of fire grate surface in each boiler 95 sq ft Description of safety valves Direct Spring (our make)
No. to each boiler 2 area of each valve 28.2" 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 About 4 1/2"
Diameter of boilers 13' 6" Length of boilers 16' 0" description of riveting of shell long. seams Ribble laps circum. seams Double laps
Thickness of shell plates 1" full diameter of rivet holes 1 7/16" whether punched or drilled Punched pitch of rivets 4 7/8"
Lap of plating 8 1/2" per centage of strength of longitudinal joint 43 working pressure of shell by rules 44 lbs
Size of manholes in shell 16" x 11 1/2" size of compensating rings 6" x 1"
No. of Furnaces in each boiler 6 outside diameter 3' 3" length, top 6' 6" bottom Whole length of boilers
Thickness of plates 1/2" (steel) description of joint Straps if rings are fitted 2 L-shaped under furnaces.
Working pressure of furnace by the rules 92 lbs
Combustion chamber plating, thickness, sides 1/2" full (steel) back top 1/2" full (steel)
Pitch of stays to ditto sides 8 3/4" x 8 1/2" back top cylinders 10" pitch/gates
If stays are fitted with nuts or riveted heads 2 nuts working pressure of plating by rules 101 lbs
Diameter of stays at smallest part 7 3/8" working pressure of ditto by rules 120 lbs
End plates in steam space, thickness 13/16" pitch of stays to ditto 18" x 18" how stays are secured Large riveted washers
Working pressure by rules 83 lbs diameter of stays at smallest part 2 3/8" working pressure by rules 81 lbs
Front plates at bottom, thickness 3/4" (steel) Back plates, thickness 3/4" (steel) greatest pitch of stays working pressure by rules
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CRK 296-Found

Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{1}{4} \times 4\frac{1}{4}$ " thickness of tube plates, front $11/16$ (iron) back $11/16$ (steel)
How stayed *Tubes* pitch of stays 14×14 off $1/4$ " width of water spaces 6 "
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, cross tubes*
Made at *Greenock* By whom made *R. Steele & Co. Greenock* made *1880*
Where fixed *In stockhold* Working pressure *50 lbs* Tested by hydraulic pressure to *110 lbs* No. of Certificate *36*
Fire grate area *21 sq ft* Description of safety valves *Direct spring* No. of safety valves *2* area of each *7"*
If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*
Diameter of donkey boiler *6'0"* length *11'0"* description of riveting *Double lap*
thickness of shell plates *3/8"* diameter of rivet holes *3/4 1/16"* whether punched or drilled *Punched*
pitch of rivets *3"* lap of plating *3 3/4"* per centage of strength of joint *43*
thickness of crown plates *11/16"* stayed by *Dished, four stays, and by uptake*
Diameter of furnace, top *4'10"* bottom *5'2"* length of furnace *5'0" laps*
thickness of plates *11/16" full* description of joint *Single lap*
thickness of furnace crown plates *11/16"* stayed by *Dished, four stays, and by uptake*
Working pressure of shell by rules *58 lbs* working pressure of furnace by rules
diameter of uptake *15"* thickness of plates *1/2"* thickness of water tubes *3/8"*

The foregoing is a correct description,
Pantlin & Blackmore Manufacturer's.

General Remarks (State quality of workmanship, opinions as to class, &c. *Workmanship and materials good*)

The engines and boilers have been inspected by me during construction, and the vessel is eligible in my opinion to be classed **LLOYD'S M.C.**, and to be noted **3. 81.**

The Machinery of this vessel has been built and fitted under inspection and is submitted. This also is certified by me. Thus do Mr. P. J. 81.

The amount of Entry Fee .. £ *3: 0: 0* received by me.
Special .. £ *24: 0: 0*
Certificate (if required) .. £ *0: 0: 0* 4 March 1881
To be sent as per margin. *£24: 0: 0*
(Travelling Expenses, if any, £

Committee's Minute Tuesday March, 31. 1881.

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

Lloyd's Register

Robert Edmund Taylor & Son Printers, 19, Old Street, Goswell Road, London, E.C.

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