

REPORT ON MACHINERY.

No. 4916

No. in Survey held at Port Glasgow & Greenock
Reg. Book.

Date, first Survey Feb 6th 1880

Received in London Office

Last Survey Dec 28 1880

on the

Iron Screw Steamer "Advance"

Tons 1326
881

Master

Robert

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 7/16 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 1/4" 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 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 1880

Is the screw shaft tunnel watertight Fitted with gland & stuffing box to shaft 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 78 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 28" 9" Length of boilers 15' 6" description of riveting of shell long. seams Double 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 thread 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

Working pressure by rules 44 lbs diameter of stays at smallest part 2 1/2" working pressure by rules 99

Front plates at bottom, thickness 3/4" Back plates, thickness 3/4" greatest pitch of stays None working pressure by rules None

3675
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" length 11'2" description of riveting Double laps
thickness of shell plates $3\frac{1}{8}$ " diameter of rivet holes $1\frac{3}{16}$ " whether punched or drilled Punched
pitch of rivets 3" lap of plating $3\frac{3}{4}$ " per centage of strength of joint 73
thickness of crown plates $4\frac{1}{16}$ " stayed by Dishd, uptake & by four vertical stays
Diameter of furnace, top 4'10" bottom 5'2" length of furnace 5'10"
thickness of plates $4\frac{1}{16}$ " description of joint Laps
thickness of furnace crown plates $4\frac{1}{16}$ " stayed by Dishd, uptake & four vertical stays
Working pressure of shell by rules 58 lbs working pressure of furnace by rules 58 lbs ($\frac{5000 \times T}{D}$) stayed by 1280
diameter of uptake 14" thickness of plates $4\frac{1}{16}$ " thickness of water tubes $4\frac{1}{16}$ "

The foregoing is a correct description.

Ranlin M 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 **LLLOYD'S M.C.** and to be noted **12.80**

The Machinery & the hull of the vessel have been examined and found to be in good condition and the vessel is fit to receive cargo.

Amount of Entry Fee .. £ 3 : 0 : 0 received by me,

Special £ 22 : 10 : 0

Certificate (if required) .. £ 0 : 0 : 0

To be sent as per margin. £ 22 : 10 : 0

Expenses, if any, £

ee's Minute

Friday, December 31st, 1880.

Lloyd's Register

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

Greenock

Lloyd's Register Foundation