

REPORT ON MACHINERY.

No. 690

No. in Survey held at *Newcastle & Seatonwood* Date, first Survey *7th Sept* Last Survey *3rd Aug 1882*
Reg. Book. *100* *562*

on the *S.S. "Barnes"* Master *S. Ginnant* Built at *Seatonwood* When built *1881*
Engines made at *Newcastle* By whom made *J. Clark & Co* when made *1882*
Boilers made at *do* By whom made *do* when made *1882*
Registered Horse Power *100* Owners *Jasper Young* Port belonging to *London*

ENGINES, &c.—

Description of Engines *Inverted Compound Surface Condensing*
Diameter of Cylinders *25½" x 48"* Length of Stroke *33* No. of Rev. per minute *77* Point of Cut off, High Pressure *half* Low Pressure *half*
Diameter of Screw shaft *8½"* Diameter of Tunnel shaft *8¼"* Diameter of Crank shaft journals *8½"* Diameter of Crank pin *5½"* size of Crank webs *12x5"*
Diameter of screw *11-0* Pitch of screw *15-0* No. of blades *44* state whether moveable *yes* total surface *33*
No. of Feed pumps *2* diameter of ditto *3½"* Stroke *16½"* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *2* diameter of ditto *3½"* Stroke *16½"* Can one be overhauled while the other is at work *yes*
Where do they pump from *Fore hold, 1. Fore hold, 3. Engine space, 3. Aft hold, 3. Sea*
No. of Donkey Engines *One* Size of Pumps *4" x 10"* Where do they pump from *Fore hold, Engine space*
off holds, 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 *yes*
No. of bilge injections *1* and sizes *4"* Are they connected to condenser, or to circulating pump *ci*
How are the pumps worked *Lever over condenser*
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 *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 *—* 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*
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Top platform of engine room*

BOILERS, &c.—

Number of Boilers *One* Description *Steel, cylindrical return tubes*
Working Pressure *80 lb* Tested by hydraulic pressure to *160 lb* Date of test *14th December 1881*
Description of superheating apparatus or steam chest *Cylinder across boiler contracted neck*
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 *50 Sq ft* Description of safety valves *Spring*
No. to each boiler *2* area of each valve *12½"* 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 *16 inches*
Diameter of boilers *14-0"* Length of boilers *10-6"* description of riveting of shell long. seams *Both double strap* circum. seams *Double Lap*
Thickness of shell plates *¾"* diameter of rivet holes *1"* whether punched or drilled *Q* pitch of rivets *4"*
Lap of plating *10"* per centage of strength of longitudinal joint *75%* working pressure of shell by rules *84 lb*
Size of manholes in shell *15" x 12"* size of compensating rings *6" x 3"*
No. of Furnaces in each boiler *3* outside diameter *41½"* length, top *7'-6"* bottom *9'-9"*
Thickness of plates *½"* description of joint *Double butt strap* if rings are fitted *Half* greatest length between rings *6'-9"*
Working pressure of furnace by the rules *80 lb*
Combustion chamber plating, thickness, sides *½"* back *9/16"* top *9/16"*
Pitch of stays to ditto *—* sides *9" x 9"* back *9¾" x 9¼"* top *curved*
If stays are fitted with nuts or riveted heads *Rivets* working pressure of plating by rules *79 lb*
Diameter of stays at smallest part *13/16"* working pressure of ditto by rules *90*
Shipping end plates in steam space, thickness *7/16"* pitch of stays to ditto *15" x 15"* how stays are secured *Quint. Flange*
Working pressure by rules *80 lb* diameter of stays at smallest part *2"* working pressure by rules *80 lb*
Front plates at bottom, thickness *7/16"* Back plates, thickness *7/16"* greatest pitch of stays *14½"* working pressure by rules *80 lb*

Diameter of tubes $3\frac{1}{2}$ " pitch of tubes 5×5 " thickness of tube plates, front $\frac{25}{32}$ " back $\frac{3}{4}$ "
How stayed Tubes pitch of stays 15×15 " width of water spaces 6 in
Diameter of ~~Superheater~~ Steam chest 4-0 length 6-0
Thickness of plates $\frac{1}{2}$ " description of longitudinal joint A Lap diameter of rivet holes $\frac{3}{4}$ " pitch of rivets $2\frac{1}{2}$ "
Working pressure of shell by rules 113 lbs 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 $\frac{3}{4}$ " How stayed 4 Stays $2\frac{1}{2}$ " diameter. pitch 16×16
Superheater or steam chest; how connected to boiler centrusted neck

DONKEY BOILER— Description Cochran Patent
Made at Gateshead By whom made C. C. & Quayley when made Tested 7th November 1881
Where fixed on deck working pressure 60 lbs Tested by hydraulic pressure to 120 No. of Certificate 724
Fire grate area 11 Sq ft Description of safety valves Spring No. of safety valves one area of each 7 sq"
If fitted with easing gear yes If steam from main boilers can enter the donkey boiler no
Diameter of donkey boiler 4-3 length 9-6 description of riveting Double Lap. Long seam
thickness of shell plates $\frac{3}{8}$ " diameter of rivet holes $\frac{3}{4}$ " whether punched or drilled punched
pitch of rivets 3 lap of plating 4" per centage of strength of joint 75
thickness of crown plates $\frac{1}{2}$ stayed by 3 Sunset Stays & disked to 8 ft radius
Radius of furnace, top 21 inches bottom diameter 3-8 length of furnace —
thickness of plates $\frac{3}{8}$ " description of joint Single Lap
thickness of furnace crown plates $\frac{1}{16}$ " stayed by —
Working pressure of shell by rules 85 lbs working pressure of furnace by rules 63 lbs
diameter of uptake 1 1/2 x 11 thickness of plates — thickness of water tubes —

The foregoing is a correct description,

W. C. R. L.

Manufacturer.

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

The Machinery of this vessel has been specially
surveyed during construction, the materials and
workmanship are sound and satisfactory
and eligible in my opinion to have the notation
+ Lloyds M. C. 1-82 in the Society Register
Book.

The engines & boilers
of this vessel are fitted
in accordance with the
Rules - submitted with the
Sheets - he classed that
the notification + Lloyds
D.P.

The amount of Entry Fee £ 2 : - : - received by me,

Special W.C.R. £ 15 : - : -

* Certificate (if required) free - : - : - 8th Feb 1882

To be sent as per margin.

(Travelling Expenses, if any, £ - : - : -)

Committee's Minute

Friday, February 10th 1882.

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

North Shields

Lloyd's Register
Foundation