

# REPORT ON MACHINERY.

No. 356

No. in Survey held at *Newcastle & Blyth* Date, first Survey *5<sup>th</sup> Feb'y* Last Survey *1<sup>st</sup> Sept 1880*  
 Reg. Book. *✓* on the *Iron S<sup>r</sup> Speedwell* Tons *1017*  
 Master *J R Inklin* Built at *Blyth* When built *1880*  
 Engines made at *Newcastle* By whom made *Black Hawthorn & Co* when made *1880*  
 Boilers made at *do* By whom made *do* when made *1880*  
 Registered Horse Power *99* Owners *Edmond Hancock* Port belonging to *Falmouth*

## ENGINES, &c.—

Description of Engines *Inverted Compound. Surface. Condensing.*  
 Diameter of Cylinders *26 & 50* Length of Stroke *33* No. of Rev. per minute *72* Point of Cut off, High Pressure *half* Low Pressure *half*  
 Diameter of Screw shaft *9"* Diameter of Tunnel shaft *8 1/2"* Diameter of Crank shaft journals *9"* Diameter of Crank pin *9"* size of Crank webs *10 1/2 x 5 1/2*  
 Diameter of screw *11 & 0* Pitch of screw *15 ft 0* No. of blades *4* state whether moveable *no* total surface *444 Sq feet*  
 No. of Feed pumps *2* diameter of ditto *3"* Stroke *16 1/2* Can one be overhauled while the other is at work *yes*  
 No. of Bilge pumps *2* diameter of ditto *3"* Stroke *16 1/2* Can one be overhauled while the other is at work *yes*  
 Where do they pump from *Engine Space (14). Line hold (11). aft well in tunnel (11).*  
 No. of Donkey Engines *2* Size of Pumps *7 x 10 & 3 x 5* Where do they pump from *Engine Space.*  
*Line hold. aft well in tunnel. Main & aft tanks.*

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 1/2* Are they connected to condenser, or to circulating pump *no*  
 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 *2 valves others 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*  
 Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *top Engine room platform*

## BOILERS, &c.—

Number of Boilers *One* Description *Cylindrical. Return tubes.*  
 Working Pressure *75 lb* Tested by hydraulic pressure to *150 lb* Date of test *21<sup>st</sup> June 1880.*  
 Description of ~~superheating apparatus~~ or steam chest *Horizontal dome. Contracted neck.*  
 Can each boiler be worked separately *—* Can the superheater be shut off and the boiler worked separately *no*  
 No. of square feet of fire grate surface in each boiler *438 ft* Description of safety valves *Spring*  
 No. to each boiler *2* area of each valve *3 3/4 = 11 1/2* 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 *12 inches*  
 Diameter of boilers *13 & 8* Length of boilers *10 & 1 1/2* description of riveting of shell long. seams *triple Lap* circum. seams *single Lap*  
 Thickness of shell plates *7/8* diameter of rivet holes *1 1/4* whether punched or drilled *drilled* pitch of rivets *5"*  
 Lap of plating *9"* per centage of strength of longitudinal joint *75%* working pressure of shell by rules *76 lb*  
 Size of manholes in shell *18 x 12* size of compensating rings *30 x 24 x 1*  
 No. of Furnaces in each boiler *3* outside diameter *3 & 3* length, top *7 & 1 1/2* bottom *9 & 3*  
 Thickness of plates *1/2 & 9/16* description of joint *welded* if rings are fitted *no* greatest length between rings *—*  
 Working pressure of furnace by the rules *80 lb*  
 Combustion chamber plating, thickness, sides *7/16* back *7/16* top *7/16*  
 Pitch of stays to ditto *✓* sides *7 3/8 x 7 3/8* back *7 3/8 x 7 3/8* top *curved*  
 If stays are fitted with nuts or riveted heads *riveted* working pressure of plating by rules *76 lb*  
 Diameter of stays at smallest part *1 1/16* working pressure of ditto by rules *93 lb*  
 End plates in steam space, thickness *3/4* pitch of stays to ditto *17 1/2 x 17 1/2* how stays are secured *double nuts &c*  
 Working pressure by rules *75 lb* diameter of stays at smallest part *2 1/4* working pressure by rules *78 lb*  
 Front plates at bottom, thickness *9/16* Back plates, thickness *3/4 & 1/2* greatest pitch of stays *14 3/4* working pressure by rules *102 lb*



27907 Iron

Diameter of tubes  $3\frac{1}{2}$ " pitch of tubes  $4\frac{3}{4} \times 4\frac{3}{4}$ " thickness of tube plates, front  $\frac{3}{4}$ " back  $\frac{3}{4}$ "  
How stayed Tubes pitch of stays  $14\frac{1}{4} \times 14\frac{1}{4}$ " width of water spaces  $11\frac{1}{2}$ "  
Diameter of Superheater or Steam chest 3' 6" length 9' 6"  
Thickness of plates  $\frac{7}{16}$ " description of longitudinal joint double lap diameter of rivet holes  $\frac{7}{8}$ " pitch of rivets  $3\frac{5}{8}$ "  
Working pressure of shell by rules 90 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  $\frac{7}{16}$ " How stayed Spherical  
Superheater or steam chest; how connected to boiler Contracted necks  $18 \times 12 \times 5\frac{1}{2}$

DONKEY BOILER— Description Cylindrical, upright  
Made at Middlesbrough By whom made John Robinson when made 25<sup>th</sup> August 1880  
Where fixed Steadhold working pressure 60 lbs Tested by hydraulic pressure to 120 No. of Certificate 391  
Fire grate area  $14\frac{3}{4}$  Sq. ft. Description of safety valves Spring No. of safety valves one 3" dia area of each 7 sq"  
If fitted with easing gear yes If steam from main boilers can enter the donkey boiler yes  
Diameter of donkey boiler 5 ft 6 in length 12 ft 0 description of riveting Long seam double lap  
thickness of shell plates  $\frac{7}{16}$ " diameter of rivet holes  $\frac{3}{4}$  full whether punched or drilled Punched  
pitch of rivets  $2\frac{5}{8}$  lap of plating  $4\frac{1}{2}$ " per centage of strength of joint 70 %  
thickness of crown plates  $\frac{9}{16}$ " stayed by 6 Stays  $1\frac{3}{4}$ " dia & curved  
Diameter of furnace, top 4' 9" bottom 4' 9" length of furnace 3 feet 6 in  
thickness of plates  $\frac{1}{2}$ " description of joint Single lap  
thickness of furnace crown plates  $\frac{1}{2}$ " stayed by 6 Stays  $1\frac{3}{4}$ " diameter & curved  
Working pressure of shell by rules 72 lbs working pressure of furnace by rules 70 lbs  
diameter of uptake  $13\frac{1}{2}$ " thickness of plates  $\frac{3}{8}$ " thickness of water tubes  $\frac{5}{16}$ "

The foregoing is a correct description,  
for Black Hawthorn Manufacturer of engines & marine boilers  
Jacob Gallau

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

The Machinery of this vessel has been surveyed during construction. The materials & workmanship are sound and satisfactory, and under this description eligible in my opinion to have the notification & Lloyd's M. C. in the Society's Register Books.

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The amount of Entry Fee £ 2 : - : - received by me,  
Special .. £ 14 : 14 : - } W.E.S.  
Certificate (if required) Gate - : - : - 23<sup>rd</sup> Sept 1880  
To be sent as per margin.  
(Travelling Expenses, if any, £ 2. 2. 0 )

Committee's Minute Tuesday, September, 28<sup>th</sup> 18 80.

John C. Proctor  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
North Shields  
Lloyd's Register Foundation