

REPORT ON MACHINERY.

No. 343

No. in Survey held at

Newcastle

Date, first Survey 26th May

Last Survey 30th August 1880

Reg. Book.

S.S. J.E. Forster

Tons 522

Master

W. Robson

Built at

North Shields

When built

1866

Engines made at

Newcastle

By whom made

R. & H. Hawthorn

when made

1873

Boilers made at

"

By whom made

"

when made

1880

Registered Horse Power

90 H.P.

Owners

J. O. Scott

Port belonging to

Newcastle

ENGINES, &c.—

Description of Engines *Inverted compound directacting surface Condensing*
 Diameter of Cylinders *25" & 49"* Length of Stroke *30"* No. of Rev. per minute *60* Point of Cut off, High Pressure *.6* Low Pressure *.6*
 Diameter of Screw shaft *8 1/2"* Diameter of Tunnel shaft *7 1/4"* Diameter of Crank shaft journals *8"* Diameter of Crank pin *8"* size of Crank webs *9 1/2" x 5 1/2"*
 Diameter of screw *11" 0* Pitch of screw *12" 0* No. of blades *4* state whether moveable *no* total surface *40 ft*
 No. of Feed pumps *2* diameter of ditto *4"* Stroke *15"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2* diameter of ditto *4 1/2"* Stroke *12"* Can one be overhauled while the other is at work *yes*
 Where do they pump from *After peak Forehold and Engine Room*
 No. of Donkey Engines *2* Size of Pumps *3 1/2" & 7"* Where do they pump from *after peak Forehold*
Main hold Sea and Engine Room
 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 *one* and sizes *4"* Are they connected to condenser, or to circulating pump *Circulating pump*
 How are the pumps worked *From levers on both Engines*
 Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *Three Kingston valves*
 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 *August 1880*
 Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Engine Room top platform*

BOILERS, &c.—

Number of Boilers *one* Description *Cylindrical tubular (steel)*
 Working Pressure *75 lbs* Tested by hydraulic pressure to *150 lbs* Date of test *28-7-80-110432*
 Description of superheating apparatus or steam chest *Cylindrical dome*
 Can each boiler be worked separately *no* Can the superheater be shut off and the boiler worked separately *no*
 No. of square feet of fire grate surface in each boiler *49.5* Description of safety valves *Spring*
 No. to each boiler *2* area of each valve *12.5* 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 *9"*
 Diameter of boilers *13' 0"* Length of boilers *10' 6"* description of riveting of shell long. seams *Strip* circum. seams *Double Lap*
 Thickness of shell plates *1 1/8"* diameter of rivet holes *1"* whether punched or drilled *Drilled* pitch of rivets *1 1/4" C3*
 Lap of plating *1 3/8" C5* per centage of strength of longitudinal joint *75%* working pressure of shell by rules *76 lbs*
 Size of manholes in shell *12" x 18"* size of compensating rings *24" x 30"*
 No. of Furnaces in each boiler *3* outside diameter *37"* length, top *6 3/4 ft* bottom *9 ft*
 Thickness of plates *2 1/2"* description of joint *Butt strap* if rings are fitted *—* greatest length between rings *—*
 Working pressure of furnace by the rules *75 lbs*
 Combustion chamber plating, thickness, sides *7/16"* back *15/32"* top *15/32"*
 Pitch of stays to ditto *9 x 9"* sides *9 x 9"* back *9 1/2 x 9 1/2"* top *Circular*
 If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *75 lbs*
 Diameter of stays at smallest part *1 3/8"* working pressure of ditto by rules *106 lbs*
 End plates in steam space, thickness *3/32"* pitch of stays to ditto *14 1/2 x 14 1/2"* how stays are secured *Nuts & washers*
 Working pressure by rules *84 lbs* diameter of stays at smallest part *1 3/8"* working pressure by rules *105 lbs*
 Front plates at bottom, thickness *7/16"* Back plates, thickness *7/16"* greatest pitch of stays *12"* working pressure by rules *75 lbs*

IRON 495-0396

28007 Iron

Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{3}{4}$ " thickness of tube plates, front $3\frac{1}{2}$ " back $5\frac{1}{8}$ "
How stayed *tubes* pitch of stays $15 \times 14\frac{1}{2}$ " width of water spaces $11\frac{1}{2}$ "
Diameter of Superheater or Steam chest $4\frac{1}{2}$ ft length $8\frac{1}{2}$ ft
Thickness of plates $\frac{3}{8}$ " description of longitudinal joint *Double Lap* diameter of rivet holes $\frac{3}{4}$ " pitch of rivets $1\frac{1}{16}$ "
Working pressure of shell by rules $95\frac{1}{2}$ 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 $\frac{5}{8}$ " How stayed *3 stays 1\frac{1}{2}* dia & dished to *3" 9" dia*
Superheater or steam chest; how connected to boiler *Contracted neck*

DONKEY BOILER—

Description
Made at — By whom made — when made —
Where fixed — working pressure — Tested by hydraulic pressure to — No. of Certificate —
Fire grate area — Description of safety valves — No. of safety valves — area of each —
If fitted with easing gear — If steam from main boilers can enter the donkey boiler —
Diameter of donkey boiler — length — description of riveting —
thickness of shell plates — diameter of rivet holes — whether punched or drilled —
pitch of rivets — lap of plating — per centage of strength of joint —
thickness of crown plates — stayed by —
Diameter of furnace, top — bottom — length of furnace —
thickness of plates — description of joint —
thickness of furnace crown plates — stayed by —
Working pressure of shell by rules — working pressure of furnace by rules —
diameter of uptake — thickness of plates — thickness of water tubes —

The foregoing is a correct description,
R. W. Hawthorn Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *The vessel was placed in Dry Dock and all sea cocks overhauled, those on flat of bottom removed up to turn of bilge, New end put on propeller shaft, propeller refitted and new lignum vitae put in stern bush, Crankshaft examined and lined up, all pumps overhauled and glands rebushed where found worn, Cylinders, pistons and valves overhauled, and Condenser tubes drawn cleaned and tested: Main boiler supplied and fixed on board by Messrs R. W. Hawthorn and spring safety valves fitted to same and set to 75 lbs pressure. The sluice valves on Engine Room Bulkheads made accessible, and on all being completed the machinery was tried under steam and found all in order. The old winch boiler has been taken out, and will be replaced by a new one when the vessel returns.*

The machinery of this vessel is now in good order and safe working condition and eligible in my opinion to have the notification Lloyd's M. C. Recorded in the Society's Register Book

The amount of Entry Fee £ 2 : - : - received by me,
Special .. £ 4 : 4 : -
Certificate (if required) .. £ - : - : - 18th Oct 1880
To be sent as per margin.
(Travelling Expenses, if any, £ -)

Committee's Minute *Friday, October 22nd 1880*
Lloyd's M 6 8-80
NB 80

It is submitted that this vessel is eligible to have the notification Lloyd's M. C. NB 80 recorded.
21/10/80
Thomas Wilson
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

