

REPORT ON MACHINERY.

No. 511

(Received in London Office 13/6/81)

No. in Survey held at *Newcastle*

Date, first Survey 14th Sept. 1880 Last Survey 8th June 1881

Reg. Book.

on the

Screw Steamer "Dryburgh Abbey"

Tons 1481

Master

James Forbes

Built at

Newcastle

When built

1881

Engines made at

Newcastle

By whom made

Wigham Richardson & Co. made 1881

Boilers made at

"

By whom made

" when made 1881

Registered Horse Power

300

Owners

Wood Brothers

Port belonging to

Liverpool

ENGINES, &c.—

Description of Engines *Compound Inverted Directacting Surface Condensing*
 Diameter of Cylinders *35-4 70* Length of Stroke *48* No. of Rev. per minute *65* Point of Cut off, High Pressure *5-* Low Pressure *5-*
 Diameter of Screw shaft *13* Diameter of Tunnel shaft *12 1/2* Diameter of Crank shaft journals *13* Diameter of Crank pin *13* size of Crank webs *15 1/2*
 Diameter of screw *16-0* Pitch of screw *18.6* No. of blades *4* state whether moveable *fixed* total surface *64 ft*
 No. of Feed pumps *2* diameter of ditto *4 1/2* Stroke *28* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2* diameter of ditto *4 1/2* Stroke *28* Can one be overhauled while the other is at work *yes*
 Where do they pump from *Fore & Engine Room tanks, Fore & after Holds, Engine Room & Tunnel well*
 No. of Donkey Engines *1* / *Pulomometer* Size of Pumps *8 1/2 x 7 1/2 x 12* Where do they pump from *Fore & Engine Room tanks*
Fore & after Holds, Engine Room, Tunnel well, Hotwell & 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 *Circulating pump*
 How are the pumps worked *From Levers over Condenser*
 Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *3 Valves & 5 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*
 Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *Top platform*

BOILERS, &c.—

Number of Boilers *3* Description *Novel (Turners Patent)*
 Working Pressure *90 lbs* Tested by hydraulic pressure to *180 lbs* Date of test *26-4-81*
 Description of superheating apparatus or steam chest *None*
 Can each boiler be worked separately *Yes* Can the superheater be shut off and the boiler worked separately *"*
 No. of square feet of fire grate surface in each boiler *35 ft* Description of safety valves *Spring*
 No. to each boiler *2* area of each valve *9.6* 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 *10"*
 Diameter of boilers *8.6* Length of boilers *17.3* description of riveting of shell long. seams *Double Butt* circum. seams *Lap. Riveted*
 Thickness of shell plates *3/2* diameter of rivet holes *3/4* whether punched or drilled *Drilled* pitch of rivets *3*
 Lap of plating *4 1/2* per centage of strength of longitudinal joint *75%* working pressure of shell by rules *90 lbs*
 Size of manholes in shell *11 x 15* size of compensating rings *6 x 3 1/4*
 No. of Furnaces in each boiler *2* outside diameter *"* length, top *"* bottom *"*
 Thickness of plates *"* description of joint *"* if rings are fitted *"* greatest length between rings *"*
 Working pressure of furnace by the rules *"*
 Combustion chamber plating, thickness, sides *"* back *"* top *"*
 Pitch of stays to ditto *"* sides *"* back *"* top *"*
 If stays are fitted with nuts or riveted heads *"* working pressure of plating by rules *"*
 Diameter of stays at smallest part *"* working pressure of ditto by rules *"*
 End plates in steam space, thickness *1/2 x 3/8* doubling plate pitch of stays to ditto *18"* how stays are secured *Nuts & Washers*
 Working pressure by rules *90 lbs* diameter of stays at smallest part *2 1/2* working pressure by rules *90 lbs*
 Front plates at bottom, thickness *7/8* Back plates, thickness *9/16* greatest pitch of stays *9 1/2* working pressure by rules *126 lbs*

Report recd. 24/5/81. Sent to Gen. 11/6/81

Boiler similar to S.S. "Borden Town" Machinery Report No. 457

[Form No. 8, 2000-3/10/80]

Lloyd's Register
 NWC 748-0045

Diameter of tubes $3\frac{1}{2}$ pitch of tubes 5 thickness of tube plates, front $\frac{11}{16}$ back $\frac{11}{16}$
How stayed stay tubes pitch of stays 15 width of water spaces
Diameter of Superheater or Steam chest 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 *Cochran's Patent*
Made at *Newcastle* By whom made *Clarke, Chapman & Gurney* when made *4-81*
Where fixed *Main Deck* working pressure *55 lbs* Tested by hydraulic pressure to *110 lbs* No. of Certificate *573*
Fire grate area *20 ft* Description of safety valves *Spring* No. of safety valves *1* area of each *9.6*
If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*
Diameter of donkey boiler *5' 6"* length *13.0* description of riveting *Long, seams double Riveted*
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 *$2\frac{1}{2}$* per centage of strength of joint *75%*
thickness of crown plates *$\frac{1}{2}$* stayed by *H. Busset stays 10" x $\frac{1}{2}$ "*
Diameter of furnace, top *27" Radius* bottom *5' 0"* length of furnace *3.6*
thickness of plates *$\frac{7}{16}$* description of joint *Lap single Riveted*
thickness of furnace crown plates *$\frac{1}{2}$* stayed by *27" Radius*
Working pressure of shell by rules *66 lbs* working pressure of furnace by rules *70 lbs*
diameter of uptake thickness of plates thickness of water tubes

The foregoing is a correct description,

William Williams 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 good and render the Vessel eligible in my opinion to have the notification \times Lloyds M.C. Recorded in the Society's Register Book, subject to the boilers being inspected every six months by one of the Society's Engineer Surveyors, as per the Committee's approval 15th July 1880

This submitted that this vessel is eligible to have the notification \times Lloyds M.C. recorded subject to the boilers being inspected every six months in accordance with the Committee's approval.
M 13/6/81

The amount of Entry Fee \pounds 3 : - : - received by me,

Special \pounds 35 : - : -

Certificate (if required) *gratis* - : - : - 31st May 1881

To be sent as per margin.

(Travelling Expenses, if any, \pounds)

Committee's Minute

Tuesday, June, 14th 1881.

Lt to Owners 16/6/81.

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

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

North Shields

Lloyd's Register
Foundation