

REPORT ON MACHINERY.

(15371)

Survey held at *Stockton & Blyth* Date, first Survey *6 Aug^t 1880* Last Survey *13 April 1881*
 on the *S. V. D. Lessey* Tons *1454*
 Built at *Blyth* When built *1881*
 By whom made *Blair & Co (L^{rs})* when made *1881*
 By whom made *Do* when made *Do*
 Registered Horse Power *140* Owners *Watts Ward & Co* Port belonging to *London*

ENGINES, &c.—

Description of Engines *Compound. Inverted Surface Condensing,*
 Diameter of Cylinders *32" & 60"* Length of Stroke *39"* No. of Rev. per minute *65* Point of Cut off, High Pressure *1/2 stroke* Low Pressure *1/2 stroke*
 Diameter of Screw shaft *11 1/2"* Diameter of Tunnel shaft *10 1/4"* Diameter of Crank shaft journals *11 1/4"* Diameter of Crank pin *11 3/4"* size of Crank webs *15 3/4" x 8 1/2"*
 Diameter of screw *15" - 0"* Pitch of screw *16" - 0"* No. of blades *Four* state whether moveable *No* total surface *Not ascertained*
 Diameter of Feed pumps *Two* diameter of ditto *4"* Stroke *28"* Can one be overhauled while the other is at work *Yes*
 Diameter of Bilge pumps *Two* diameter of ditto *4"* Stroke *28"* Can one be overhauled while the other is at work *Yes*
 Where do they pump from *From fore hold, engine room, after hold after well & ballast tanks. After pump from after hold*
 Diameter of Donkey Engines *Two* Size of Pumps *1 1/2 dia x 9 stroke* Where do they pump from *Large donkey from fore hold, engine room*
 Are the bilge suction pipes fitted with roses *Yes* Are the roses always accessible *Yes* Are the sluices on Engine room bulkheads always accessible *Yes*
 Are the bilge injections *One* and sizes *6"* Are they connected to condenser or to circulating pump *Circulating pump*
 Are the pumps worked *By levers worked from cross head on low pressure piston rod*
 Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Stop 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 *at & 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*
 Are pipes carried through the bunkers *None* How are they protected *Yes*
 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*
 Were stern tube, propeller, screw shaft, and all connections examined in dry dock *Yes*
 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 *Two* Description *Cylindrical. Multitubular*
 Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* Date of test *24.2.81. Certificate N^o 488*
 Description of superheating apparatus or steam chest *Vertical steam dome. Contracted at neck.*
 Can each boiler be worked separately *Yes* Can the superheater be shut off and the boiler worked separately *No Superheater*
 Area of square feet of fire grate surface in each boiler *28 sq feet* Description of safety valves *Spring. Made by Blair & Co (L^{rs})*
 Area of each valve *9.62 sq in* Are they fitted with easing gear *Yes*
 Area of each valve *9.62 sq in* Are they fitted with easing gear *Yes*
 Least distance between boilers and bunkers or woodwork *11"*
 Diameter of boilers *12' 6"* Length of boilers *10' 6"* description of riveting of shell long. seams *all welded except seams of one plate no inner casing*
 Diameter of rivet holes *1 1/16"* whether punched or drilled *Drilled* pitch of rivets *4 1/8"*
 Thickness of shell plates *1"* diameter of rivet holes *1 1/16"* whether punched or drilled *Drilled* pitch of rivets *4 1/8"*
 Working pressure of shell by rules *90 lbs*
 Plating *Butt straps 10" broad* per centage of strength of longitudinal joint *6 1/2%*
 Size of compensating rings *Rectangular plates 28" x 24" x 1 1/8"*
 Number of manholes in shell *15 1/2" x 11 1/2"* outside diameter *3' 4 1/4"* length, top *6' 6"* bottom *9' 3"*
 Number of Furnaces in each boiler *Two* description of joints *Double butt strap* if rings are fitted *No* greatest length between rings *—*
 Thickness of plates *Top 7/16 bottom 5/8* description of joints *Double butt strap* if rings are fitted *No* greatest length between rings *—*
 Working pressure of furnace by the rules *Top 10 lbs bottom 8 1/4 lbs*
 Thickness of plating, thickness, sides *1/2" steel plate* back *1/2" steel plate* top *1/2" steel plate*
 Thickness of stays to ditto *8 x 8* back *8 x 7 1/8* top *Curved top*
 Are stays fitted with nuts or riveted heads *Part with nuts & part riveted* working pressure of plating by rules *100 lbs*
 Diameter of stays at smallest part *1 5/16"* working pressure of ditto by rules *126 lbs*
 Pitch of stays to ditto *1 1/4" x 14 3/8" + 2 1/2" stay* how stays are secured *Butts & nuts*
 Diameter of stays at smallest part *2 1/2" x 2 3/8"* working pressure by rules *116 lbs*
 Back plates, thickness *1 3/16"* greatest pitch of stays *12 1/8" x 8"* working pressure by rules *82 lbs*
 Thickness of plates at bottom, thickness *1 3/16"*

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NWC777-0264

Diameter of tubes $3\frac{1}{2}$ pitch of tubes $4\frac{3}{4}$ thickness of tube plates, front $13/16$ back $13/16$ Shell plates
 How stayed *Screwed tubes* pitch of stays $14\frac{1}{4} \times 19\frac{1}{2}$ width of water spaces $6\frac{1}{2}$ smallest space between furnaces
 Diameter of Superheater or Steam chest $3\frac{1}{4}$ length $5\frac{1}{6}$
 Thickness of plates $1/2$ description of longitudinal joint *Lap, double* diameter of rivet holes $13/16$ pitch of rivets $3\frac{1}{8}$
 Working pressure of shell by rules 126 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 $1\frac{1}{2}$ bottom $1\frac{1}{4}$ How stayed *Four Stays $2\frac{1}{8}$ dia*
 Superheater or steam chest; how connected to boiler *By malleable iron pipe $10\frac{1}{2}$ dia $1\frac{1}{8}$ thick Double flanged to the*

DONKEY BOILER— Description *Upright cylindrical*
 Made at *Gateshead* By whom made *Clark Chapman* when made *28th Feb 1881*
 Where fixed *Stockhold* working pressure 80 lbs Tested by hydraulic pressure to 160 lbs No. of Certificate *530*
 Fire grate area $22\frac{1}{2}\text{ sq ft}$ Description of safety valves *Spring* No. of safety valves *One* area of each $3\frac{3}{4}\text{ sq in} = 11\text{ in}$
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*
 Diameter of donkey boiler $6-0$ length $12-6$ description of riveting *Heavy double Lap*
 thickness of shell plates $9/16$ diameter of rivet holes $15/16$ whether punched or drilled *punched*
 pitch of rivets $3\frac{3}{8}$ lap of plating $4\frac{1}{2}$ per centage of strength of joint 70%
 thickness of crown plates $9/16$ stayed by *Disked to 5ft radius & 6 Stays $1\frac{1}{2}$ diameter*
 Diameter of furnace, top $4-8$ bottom $5-4$ length of furnace $5\frac{1}{2}-4\text{ in}$
 thickness of plates $9/16$ description of joint *Single Lap*
 thickness of furnace crown plates $9/16$ stayed by *6 Stays $1\frac{1}{2}$ dia*
 Working pressure of shell by rules 92 lbs working pressure of furnace by rules 80 lbs
 diameter of uptake 16 thickness of plates $3/8$ thickness of water tubes $7/16$

The foregoing is a correct description,
Robt Blair & Co Manufacturers of Engines & Marine Boilers only
R. Blair

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

Material & workmanship good.
For results of tests applied to samples of steel
used in construction of combustion chambers & for back turn
plates see Secretaries letter dated 13th October 1880
The Machinery & Boilers of this vessel are in good
order & safe working condition & in my opinion eligible for
the Notification of Lloyd's M.C. in the Register Book

This submitted that this
vessel is eligible to have the
Notification of Lloyd's M.C.
Recorded
12/5/81

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

Special .. £ 21 : : :

Certificate (if required) .. £ : : : 10th May 1881

To be sent as per margin.

(Travelling Expenses, if any, £ 2. 2. 0)

Committee's Minute

Friday May, 13th 1881.

Robt Blair & Co

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

