

REPORT ON MACHINERY.

No. 494

No. in Survey held at *Sunderland*
Reg. Book.

Date, first Survey *Oct. 7th 1879* Last Survey *April 30th 1880*

475 on the *Screw Steamer Seaton*

Master *Thomas Shaw*

Built at *Newcastle*

When built *1854*

Engines made at *Sunderland*

By whom made *North Eastern & Coy* when made *April 1880*

Boilers made at *Sunderland*

By whom made *R. E. Engineering Co* when made *April 1880*

Registered Horse Power *40*

Owners *Mr L Wood*

Port belonging to *Sunderland*

ENGINES, &c.—

Description of Engines *Inverted compound & surface condensing*

Diameter of Cylinders *23" & 44"* Length of Stroke *2-6"* No. of Rev. per minute *42* Point of Cut off, High Pressure *15"* Low Pressure *15"*

Diameter of Screw shaft *4 1/4"* Diameter of Tunnel shaft *none* Diameter of Crank shaft journals *8 1/4"* Diameter of Crank pin *8"* size of Crank webs *10" x 5 1/4"*

Diameter of screw *9-9"* Pitch of screw *14-0"* No. of blades *4* state whether moveable *not* total surface *26 square ft*

No. of Feed pumps *2* diameter of ditto *3"* Stroke *2-6"* Can one be overhauled while the other is at work *no*

No. of Bilge pumps *1* diameter of ditto *4"* Stroke *2-6"* Can one be overhauled while the other is at work *only one*

Where do they pump from *Centre bilge of engine room*

No. of Donkey Engines *2* Size of Pumps *6" diameter 9" stroke* Where do they pump from *Fore main and after tanks and bilges*

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 *3 1/2"* Are they connected to condenser, or to circulating pump *circulating pump*

How are the pumps worked *Direct from crosshead*

Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *Both 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 *no pipes in 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 *February 1880*

Is the screw shaft tunnel watertight *no tunnel fitted with a sluice door* worked from *Engines in after end of vessel*

BOILERS, &c.—

Number of Boilers *one* Description *Cylindrical and multitubular*

Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* Date of test *17th December 1879*

Description of superheating apparatus or steam chest *Upright cylindrical double riveted lap jointed*

Can each boiler be worked separately *only one* Can the superheater be shut off and the boiler worked separately *no superheater*

No. of square feet of fire grate surface in each boiler *36 square feet* Description of safety valves *Spring direct acting Adams patent*

No. to each boiler *2* area of each valve *9-621 sq in* 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 *8" from boilers to bunkers*

Diameter of boiler *12-4"* Length of boiler *10-5"* description of riveting of shell long. seams *Treble* circum. seams *Double*

Thickness of shell plates *7/8"* diameter of rivet holes *1 5/32"* whether punched or drilled *drilled* pitch of rivets *4 1/2"*

Lap of plating *6 1/2"* per centage of strength of longitudinal joint *72 1/2%* working pressure of shell by rules *80 lbs*

Size of manholes in shell *16" x 11 1/2"* size of compensating rings *Rectangular 2 1/4" x 2 3/4" x 7/8"*

No. of Furnaces in each boiler *3* outside diameter *3-0"* length, top *6-0"* bottom *8-6"*

Thickness of plates *1 1/32"* description of joint *Double butt strap* rings are fitted *no* greatest length between rings

Working pressure of furnace by the rules *Top 114 lbs Bottom 82-6 lbs*

Combustion chamber plating, thickness, sides *5/8"* back *5/8"* top *5/8"*

Pitch of stays to ditto sides *8" x 8"* back *8" x 8"* top *8" x 8"*

If stays are fitted with nuts or riveted heads *with riveted heads* working pressure of plating by rules *156 lbs*

Diameter of stays at smallest part *1 1/8"* working pressure of ditto by rules *93 lbs*

End plates in steam space, thickness *1 3/16"* pitch of stays to ditto *15" x 14"* how stays are secured *Double nuts & washers*

Working pressure by rules *105 lbs* diameter of stays at smallest part *2 1/4"* working pressure by rules *106 lbs*

Front plates at bottom, thickness *3/4"* Back plates, thickness *3/4"* greatest pitch of stays *8" x 8"* working pressure by rules *93 lbs*

26818 Gun

Diameter of tubes $3\frac{1}{2}$ " pitch of tubes 5×5 " thickness of tube plates, front $\frac{3}{4}$ " back $\frac{5}{8}$ "
How stayed stay tubes pitch of stays 15×10 " width of water spaces $1\frac{3}{8}$ " between tubes & $10\frac{1}{2}$ " between tubes on the different bores
Diameter of Superheater or Steam chest $4 \sim 3$ " length $4 \sim 0$ "
Thickness of plates $\frac{7}{16}$ " description of longitudinal joint Lap double riveted diameter of rivet holes $\frac{3}{4}$ " pitch of rivets $2\frac{1}{2}$ "
Working pressure of shell by rules 93 lbs Diameter of flue none thickness of plates
If stiffened with rings distance between rings Working pressure by rules
End plates of superheater, or steam chest; thickness $\frac{1}{2}$ " How stayed No stays but dished to a radius of $4 \sim 0$ "
Superheater or steam chest; how connected to boiler Iron (malleable) tube 12 " long $1\frac{1}{4}$ " diam & $\frac{7}{16}$ " thick - flanged to boiler & chest
DONKEY BOILER— Description No donkey boiler
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.

Manufacturer.

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

The machinery of this vessel has been constructed under ordinary survey and was tried under steam and found satisfactory

The material and workmanship is good

In our opinion the engine and boiler of this vessel are in good order and safe working condition and eligible for *Lloyds M.C.* in the Register Book

The old engines Boilers tunnel shafting stern tube and all other details of the machinery were removed and new Engines and Boilers with all the details complete were fitted

It is submitted that this vessel is eligible to have the notifications Lloyd's M.C. & N.B. 80 recorded in the Register Book J.M. 14/6/80

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

Special £ 8 : 0 :

Certificate (if required) £ 0 : 5 : 10 June 1880

To be sent as per margin.

(Travelling Expenses, if any, £

£10-5

Committee's Minute

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William Allison & Patrick Salmon
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.