

REPORT ON MACHINERY.

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No. 396.

No. in Reg. Book. 894 on the *S.S. Ann Webster* Survey held at *Hpool West Hartlepool* Date, first Survey *2nd Octbr* Last Survey *9th Decr* 1880

Master *Blackburn* Built at *Hartlepool* When built *1870*

Engines made at *Hartlepool* By whom made *J. Richardson & Sons* when made *1870*

Boilers made at *"* By whom made *"* when made *1880 12th Mo*

Registered Horse Power *96* Owners *Ann Steam Ship Co. (Lind.)* Port belonging to *Frieda*

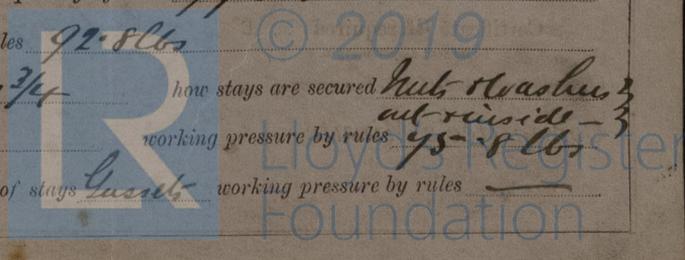
ENGINES, &c.—

Description of Engines *Compound Inverted Surface Condensing*
 Diameter of Cylinders *25" x 48"* Length of Stroke *36* No. of Rev. per minute *about 65* Point of Cut off, High Pressure *1/2 stroke* Low Pressure *1/2 stroke*
 Diameter of Screw shaft *8"* Diameter of Tunnel shaft *7 1/2"* Diameter of Crank shaft journals *8 1/4"* Diameter of Crank pin *7 1/2"* size of Crank webs *6 x 10*
 Diameter of screw *12" - 8"* Pitch of screw *about 14" - 6"* No. of blades *4* state whether moveable *not* total surface *42 sq feet*
 No. of Feed pumps *1* diameter of ditto *3 3/4"* Stroke *36* Can one be overhauled while the other is at work *—*
 No. of Bilge pumps *1* diameter of ditto *3 3/4"* Stroke *36* Can one be overhauled while the other is at work *—*
 Where do they pump from *Engine room Fore-hold and after well*
 No. of Donkey Engines *one* Size of Pumps *3" dia x 9" stroke* Where do they pump from *Sea Not well Engine room and after well*
Centrifugal Pump for pumping out Ballast 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 *no*
 No. of bilge injections *1* and sizes *3 1/2" dia* Are they connected to condenser, or to circulating pump *to circulating pump*
 How are the pumps worked *Auxiliary pump also four piston rod crossheads direct*
 Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *Valves and Cocks*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates *no* Are the discharge pipes above or below the deep water line *below*
 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 *no*
 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 *9th Decr 1880*
 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 *1* Description *Cylindrical Multi-tubular Marine Type*
 Working Pressure *75-lbs* Tested by hydraulic pressure to *150 lbs* Date of test *16/11/80*
 Description of superheating apparatus or steam chest *Vertical down*
 Can each boiler be worked separately *—* Can the superheater be shut off and the boiler worked separately *No Superheater*
 No. of square feet of fire grate surface in each boiler *47.5* Description of safety valves *Spring made by J. Richardson & Sons*
 No. to each boiler *2* area of each valve *15.03* 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"*
 Diameter of boilers *13'-5"* Length of boilers *10'-0"* description of riveting of shell long. seams *DB Shop Riv'd* circum. seams *Lap Riv'd*
 Thickness of shell plates *25/32* diameter of rivet holes *1 1/8"* whether punched or drilled *drilled* pitch of rivets *5 1/8"*
 Lap of plating *5"* per centage of strength of longitudinal joint *78.04* working pressure of shell by rules *75.7 lbs*
 Size of manholes in *steel* *12 x 16* size of compensating rings *29 x 30 x 25/32*
 No. of Furnaces in each boiler *3* outside diameter *38.9375* length, top *6'-3"* bottom *9'-6"*
 Thickness of plates *15/32* description of joint *Lap Doub Riv'd* if rings are fitted *T rivets* greatest length between rings *6'-3"*
 Working pressure of furnace by the rules *80.9 lbs*
 Combustion chamber plating, thickness, sides *7/16* back *7/16* top *7/16*
 Pitch of stays to ditto *—* sides *7 x 7 1/2* back *7 1/2 x 7 1/2* top *8 x 8*
 If stays are fitted with nuts or riveted heads *of nuts other riv'd heads* working pressure of plating by rules *99 lbs*
 Diameter of stays at smallest part *1 1/8"* working pressure of ditto by rules *92.8 lbs*
 End plates in steam space, thickness *13/16* pitch of stays to ditto *17 3/4 x 17 3/4* how stays are secured *Nuts reaches out outside*
 Working pressure by rules *75.1 lbs* diameter of stays at smallest part *2 1/4"* working pressure by rules *95.8 lbs*
 Front plates at bottom, thickness *1/16* Back plates, thickness *3/4* greatest pitch of stays *Guards* working pressure by rules *—*

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Diameter of tubes $3\frac{1}{4}$ pitch of tubes $4\frac{1}{2} \times 4\frac{1}{2}$ thickness of tube plates, front $\frac{1}{16}$ back $\frac{1}{16}$
 How stayed *Stay tube* pitch of stays $9 \times 13\frac{1}{2}$ width of water spaces $1\frac{1}{4}$
 Diameter of Superheater or Steam chest $3'-0"$ length $6'-6"$
 Thickness of plates $\frac{7}{16}$ description of longitudinal joint *Lap Double Riveted* diameter of rivet holes $\frac{13}{16}$ pitch of rivets $2\frac{9}{16}$
 Working pressure of shell by rules $128\frac{1}{2}$ 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 $\frac{1}{2}$ How stayed *Crewal ends*
 Superheater or steam chest; how connected to boiler *by angle iron $4 \times 4 \times \frac{5}{8}$ single riveted*

DONKEY BOILER— Description *Vertical, 3 water tubes in furnace*
 Made at *Newcastle* By whom made *Clarke, Chapman & Co* when made *November - 1880*
 Where fixed *on deck* working pressure *50 lbs* Tested by hydraulic pressure to *100 lbs* No. of Certificate *499*
 Fire grate area *124 sq ft* Description of safety valves *Spring & Lever* No. of safety valves *2* area of each *7 and 4.4* sq
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*
 Diameter of donkey boiler *4'-9"* length *11'-0"* description of riveting *Long seams Lap 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 *4 in* per centage of strength of joint *75%*
 thickness of crown plates $\frac{7}{16}$ stayed by *4 Crown Stays 1 1/2 dia*
 Diameter of furnace, top *3'-6 1/2"* bottom *4'-2"* length of furnace *4'-11"*
 thickness of plates $\frac{7}{16}$ description of joint *Lap Single Riveted*
 thickness of furnace crown plates $\frac{7}{16}$ stayed by *Uptake & 4 Stays 1 1/2 dia*
 Working pressure of shell by rules *76 lbs* working pressure of furnace by rules *51 lbs*
 diameter of uptake *1'-2"* thickness of plates $\frac{3}{8}$ thickness of water tubes $\frac{3}{8}$

The foregoing is a correct description,
 Manufacturer.

Thomas Wilson

General Remarks (State quality of workmanship, opinions as to class, &c. *This Survey is held in accordance with the requirements of the rules for New Boilers and for annual Survey.*

Material and workmanship of New Boilers Good. Cylinders, Side Valves and Condenser examined. Condition of same satisfactory. New nuts and studs fitted to Piston as required. New ends in I.P. piston rods. Piston rods skinned up in lathe and new neck bases fitted. New air pump rod. Crank shaft and pumps examined and found free from defect. New wood in stern bush, fastenings of sea connection examined and found to be in order.

New Main and donkey boilers as above described. Main Boiler tested under steam and safety valves found to be loaded to 75 lbs per square inch. Donkey Boiler tested under steam and safety valves found to be loaded to 50 lbs per square inch.

The Machinery and Boilers of this vessel are in good order and safe working condition and in my opinion eligible for the Notification B & M S, in the Register Book.

Should the Notification A & C, be desired, it will be necessary to raise the deck to position above Engine room platform.

The amount of Entry Fee .. £ + : : received by me,
 Special £ 4 : 4 :
 Certificate (if required) .. £ : : 2 : 6 : 15/11/80
 To be sent as per margin.
 (Travelling Expenses, if any, £ —)

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

Committee's Minute 18

