

# REPORT ON MACHINERY.

5526

No. 5526

(Received in London Office 1/11/81 18)

No. in Survey held at Glasgow

Date, first Survey August 20<sup>th</sup> 1880 Last Survey Oct 20<sup>th</sup> 1881

Reg. Book. on the Screw Steamer "Alaska"

Tons 3548.6

Master X Price Built at Glasgow When built 1881

Engines made at Glasgow By whom made John Eldon Couper when made 1881

Boilers made at " By whom made " when made "

Registered Horse Power 1800 Owners Quion Port belonging to Liverpool

## ENGINES, &c.—

Description of Engines *Compound Inverted Direct Acting*  
 Diameter of Cylinders *68" 100"* Length of Stroke *42"* No. of Rev. per minute *60* Point of Cut off, High Pressure *.65* Low Pressure *.45*  
 Diameter of Screw shaft *24"* Diameter of Tunnel shaft *23 1/2"* Diameter of Crank shaft journals *24"* Diameter of Crank pin *25"* size of Crank web *18" x 3" x 3"*  
 Diameter of screw *23-3"* Pitch of screw *34" x 6"* No. of blades *four* state whether moveable *Yes* total surface *190 ft.*  
 No. of Feed pumps *two* diameter of ditto *9"* Stroke *34"* Can one be overhauled while the other is at work *Yes*  
 No. of Bilge pumps *two* diameter of ditto *9"* Stroke *34"* Can one be overhauled while the other is at work *Yes*  
 Where do they pump from *All the Compartments*  
 No. of Donkey Engines *two* Size of Pumps *one 15 1/2" x 8" x 12" / one 12 1/2" x 8" x 12"* Where do they pump from *From the Sea, Bilges, Hotwell & Boilers*

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 *two* and sizes *5"* Are they connected to condenser, or to circulating pump *To Condenser*  
 How are the pumps worked *By Levers* *Two Steam Engines are fitted to one in forward & stowhold*  
 Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Both*  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stowhold 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 *Bilge pipes to forward hold* How are they protected *By wood casing*  
 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 *On ship previous to being launched*  
 Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *Upper platform*

## BOILERS, &c.—

Number of Boilers *Five* Description *Round Horizontal double ended*  
 Working Pressure *100 lbs* Tested by hydraulic pressure to *200 lbs* Date of test *28<sup>th</sup> June 27<sup>th</sup> July 31<sup>st</sup> Aug 1881*  
 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 *Yes*  
 No. of square feet of fire grate surface in each boiler *138 ft. 2 1/2* Description of safety valves *Direct Spring Adams'*  
 No. to each boiler *two* area of each valve *30.6"* 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 *4 ft.*  
 Diameter of boilers *15.0"* Length of boilers *14 1/2 ft.* description of riveting of shell long. seams *Double Straps* circum. seams *Double riveted*  
 Thickness of shell plates *1 1/16"* diameter of rivet holes *1 1/8"* whether punched or drilled *Drilled* pitch of rivets *6" x 3"*  
 Percentage of strength of longitudinal joint *81.25% plate* working pressure of shell by rules *124 lbs*  
 No. of manholes in shell *16" x 12"* size of compensating rings *Large rings*  
 No. of Furnaces in each boiler *Six* mean diameter *6.9"* length, top *6.8"* bottom *Through furnaces*  
 Thickness of plates *8/16"* description of joint *Corrugated* if rings are fitted *—* greatest length between rings *—*  
 Working pressure of furnace by the rules *—*  
 Combustion chamber plating, thickness, sides *7/16" full* back *Bottom 7/16"* top *7/16" full*  
 Pitch of stays to ditto sides *7/2" x 8"* back *—* top *7/2" x 8"*  
 If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *101 lbs*  
 Diameter of stays at smallest part *1 1/4" steel* working pressure of ditto by rules *130 lbs*  
 End plates in steam space, thickness *1/16"* diameter of stays to ditto *2 5/8" + 2 1/2" + 2 1/2"* how stays are secured *By double nuts*  
 Working pressure by rules *—* diameter of stays at smallest part *1 1/4" x 1 1/4" + 1 1/4"* working pressure by rules *103 lbs*  
 Front plates at bottom, thickness *10/16"* Back plates, thickness *—* greatest pitch of stays *—* working pressure by rules *—*

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Diameter of tubes  $3\frac{1}{2}$ " pitch of tubes  $4\frac{3}{4}$ " thickness of tube plates, front  $\frac{1}{16}$ " back  $\frac{1}{16}$ "  
 How stayed *By Lugs & stays* pitch of stays  $9\frac{1}{2} \times 9\frac{1}{2}$ " width of water spaces  $\frac{1}{2}$ "  
 Diameter of Superheater or Steam chest *None* 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 *Cylindrical Vertical (Cochran's Patent)*  
 Made at *Birkenhead* By whom made *Messrs Cochran & Co.* when made *1881*  
 Where fixed *On the side of main deck* working pressure *60* Tested by hydraulic pressure to *120* No. of Certificate *118*  
 Fire grate area *28 sq. ft.* Description of safety valves *Direct Spring* No. of safety valves *Two* area of each  $\frac{1}{4}$ "  
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*  
 Diameter of donkey boiler *8' 0"* length *16' 2"* description of riveting *Vertical seams double rivet 7/8 inch 3' per*  
 thickness of shell plates  $\frac{3}{16}$ " diameter of rivet holes  $\frac{7}{8}$ " whether punched or drilled *punched*  
 pitch of rivets *3"* lap of plating  $3\frac{1}{2}$ " per centage of strength of joint *70%*  
 thickness of crown plates  $\frac{3}{16}$ " stayed by *Spherical*  
 Diameter of furnace, top *3 ft radius* bottom *6 ft.* length of furnace \_\_\_\_\_  
 thickness of plates  $\frac{1}{2}$ " description of joint *Single Rivet Lap*  
 thickness of furnace crown plates  $\frac{1}{2}$ " stayed by *Spherical*  
 Working pressure of shell by rules *67* working pressure of furnace by rules *108 lb.*  
 diameter of uptake *5" x 1" x 8"* thickness of plates  $\frac{7}{16}$ " thickness of water tubes *N-9 S.S.*

The foregoing is a correct description,  
*John Elder & Co* Manufacturer.

*Cochran & Co* Welsh boiler manufacturer  
*J. H. Kinghorn*

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *These Engines & Boilers are of good workmanship and now in good order safe working condition and eligible in my opinion to be noted in the Register.*  
 ✠ *Lloyd's M.C. 11.81 (in red)*

*It is submitted that this vessel is eligible to have the notification of Lloyd's M.C. 11.81*

*[Large blue scribble]*

The amount of Entry Fee .. £ 3 : 0 : 0 received by me,  
 Special .. £ 110 : 0 : 0  
 Certificate (if required) .. £ Grates 27/10/1881  
 (To be sent as per margin.)  
 (Travelling Expenses, if any, £ \_\_\_\_\_)

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

Committee's Minute *Tuesday, November, 1st, 1881*  
*+ Lloyd's*