

REPORT ON MACHINERY.

7/37

No. 4434

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No. in Survey held at Glasgow Date, first Survey and Last Survey 13th Septem^r 1886
 Reg. Book. on the Barque "Alexander Lawrence" Tons 1205
 Master H. Browley Built at Dumbarton By whom built A. Mc Millan & Son When built 1886
 Engines made at _____ By whom made _____ when made _____
 Boilers made at _____ By whom made _____ when made _____
 Registered Horse Power _____ Owners A. Lawrence Son & Co. Port belonging to London

ENGINES, &c.—

Description of Engines _____
 Diameter of Cylinders _____ Length of Stroke _____ No. of Rev. per minute _____ Point of Cut off, High Pressure _____ Low Pressure _____
 Diameter of Screw shaft _____ Diam. of Tunnel shaft _____ Diam. of Crank shaft journals _____ Diam. of Crank pin _____ size of Crank webs _____
 Diameter of screw _____ Pitch of screw _____ No. of blades _____ state whether moveable _____ total surface _____
 No. of Feed pumps _____ diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work _____
 No. of Bilge pumps _____ diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work _____
 Where do they pump from _____
 No. of Donkey Engines _____ Size of Pumps _____ Where do they pump from _____
 Are all the bilge suction pipes fitted with roses _____ Are the roses always accessible _____ Are the sluices on Engine room bulkheads always accessible _____
 No. of bilge injections _____ and sizes _____ Are they connected to condenser, or to circulating pump _____
 How are the pumps worked _____
 Are all connections with the sea direct on the skin of the ship _____ Are they Valves or Cocks _____
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates _____ Are the discharge pipes above or below the deep water line _____
 Are they each fitted with a discharge valve always accessible on the plating of the vessel _____ Are the blow off' cocks fitted with a spigot and brass covering plate _____
 What pipes are carried through the bunkers _____ How are they protected _____
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times _____
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges _____
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock _____
 Is the screw shaft tunnel watertight _____ and fitted with a sluice door _____ worked from _____

BOILERS, &c.—

Number of Boilers _____ Description _____ Whether Steel or Iron _____
 Working Pressure _____ Tested by hydraulic pressure to _____ Date of test _____
 Description of superheating apparatus or steam chest _____
 Can each boiler be worked separately _____ Can the superheater be shut off and the boiler worked separately _____
 No. of square feet of fire grate surface in each boiler _____ Description of safety valves _____ No. to each boiler _____
 Area of each valve _____ Are they fitted with easing gear _____ No. of safety valves to superheater _____ area of each valve _____
 Are they fitted with easing gear _____ Smallest distance between boilers and bunkers or woodwork _____ Diameter of boilers _____
 Length of boilers _____ description of riveting of shell long. seams _____ circum. seams _____ Thickness of shell plates _____
 Diameter of rivet holes _____ whether punched or drilled _____ pitch of rivets _____ Lap of plating _____
 Per centage of strength of longitudinal joint _____ working pressure of shell by rules _____ size of manholes in shell _____
 Size of compensating rings _____ No. of Furnaces in each boiler _____
 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 _____
 Pitch of stays to ditto _____ how stays are secured _____ working pressure by rules _____ diameter of stays at _____
 smallest part _____ working pressure by rules _____ Front plates at bottom, thickness _____ Back plates, thickness _____
 Greatest pitch of stays _____ working pressure by rules _____ Diameter of tubes _____ pitch of tubes _____ thickness of tube _____
 plates, front _____ back _____ how stayed _____ pitch of stays _____ width of water spaces _____
 Diameter of Superheater or Steam chest _____ length _____ thickness of plates _____ description of longitudinal joint _____ diam. 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 _____

State if it ports or also sent to the Y. of the Ship

Sailing Ship "Alexander Lawrence" 7737 gts.

DONKEY BOILER— Description *Vertical (2 cross tubes)*
 Made at *Gateshead* by whom made *Clark Chapman & Co* when made *1886* where fixed *On Deck*
 Working pressure *60 lbs* tested by hydraulic pressure to *120 lbs* No. of Certificate *2173* fire grate area *9 ft* description of safety valves *Direct Spring* No. of safety valves *one* area of each *7"* if fitted with easing gear *yes* if steam from main boilers can enter the donkey boiler
 diameter of donkey boiler *4'0"* length *8'0"* description of riveting *Double lap*
 Thickness of shell plates *11/32"* diameter of rivet holes *3/4"* whether punched or drilled *punched* pitch of rivets *2 3/4"* lap of plating *3 5/8"*
 per centage of strength of joint *72%* thickness of crown plates *9/16"* stayed by *Three stays 1 3/8" dia (Steel)*
 Diameter of furnace, top *2'0" 8 3/8"* bottom *3'0" 4 3/8"* length of furnace *4'0" 4"* thickness of plates *9/16"* description of joint *Single lap*
 Thickness of furnace crown plates *9/16"* stayed by *as above* working pressure of shell by rules *103 lbs*
 Working pressure of furnace by rules *44 lbs* diameter of uptake *10"* thickness of plates *9/16" iron* thickness of water tubes *—*
 Signed *J. B. 1/11/86*

SPARE GEAR. State the articles supplied:— *Examined this boiler under steam and set the Safety valve to the working pressure. It is now in good order & safe working condition.*
James Morrison 14/12/86

The foregoing is a correct description,
 Manufacturer.

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

(Empty space for general remarks)

The amount of Entry Fee .. £	:	:	received by me,
Special	£	:	
Donkey Boiler Fee .. .	£	:	
Certificate (if required) .. £	✓	:	18
<small>To be sent as per margin.</small>			
<small>(Travelling Expenses, if any, £)</small>			

It is noticed that no fee is charged for this work
M.D.
16/12/86

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

