

REPORT ON MACHINERY.

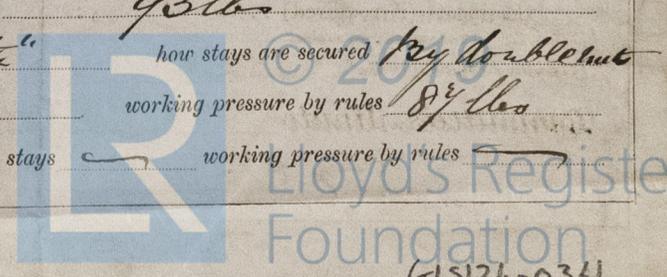
No. 5344 (Received in London Office 11/4/81)
 No. in Survey held at Glasgow Date, first Survey Sept 6th 1880 Last Survey April 7th 1881
 Reg. Book. 3704.96
 on the Screw Steamer Drummond Castle Tons 2380.68
 Master A. Winchester Built at Glasgow When built 1881
 Engines made at Glasgow By whom made A. Elder & Co when made 1881
 Boilers made at " By whom made " when made 1881
 Registered Horse Power 500 Owners Donald Currie & Co Port belonging to London

ENGINES, &c.—

Description of Engines Compound Inverted Direct acting
 Diameter of Cylinders 51" & 88" Length of Stroke 54 No. of Rev. per minute 77 Point of Cut off, High Pressure .6 Low Pressure
 Diameter of Screw shaft 10 1/2" Hollow steel shaft Diameter of Tunnel shaft 16" Diameter of Crank shaft journals 14 3/4" Diameter of Crank pin 18" size of Crank webs 19 1/2" x 11 1/2"
 Diameter of screw 19 1/2" Pitch of screw 23 ft No. of blades Four ~~movable~~ total surface 94 ft
 No. of Feed pumps Two diameter of ditto 6" Stroke 20" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps Two diameter of ditto 6" Stroke 25" Can one be overhauled while the other is at work Yes
 Where do they pump from All the Compartments
 No. of Donkey Engines One Size of Pumps 12 cyl 6" x 12" stroke Where do they pump from From the sea Bilge & Hotwell
Centrifugal pumps with 15" pipe connections From Bilge & Ballast Tanks & Sea
 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 15" Are they connected to condenser, or to circulating pumps To circulating
 How are the pumps worked By Levers
 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 stokehold plates Yes Are the discharge pipes above or below the deep water line Near to
load line
 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 Main Steam pipe How are they protected By Iron Casings
 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 Slip previous to being launched
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from From upper platform

BOILERS, &c.—

Number of Boilers Two Description Round Horizontal Double ended
 Working Pressure 95 lbs Tested by hydraulic pressure to 150 Date of test 27.1.81
 Description of superheating apparatus Annular with Single Tube
 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 162 ft Description of safety valves Direct Spring (Cochburn's)
 No. to each boiler Three area of each valve 25.9" Are they fitted with easing gear Yes
 No. of safety valves to superheater One area of each valve 4" are they fitted with easing gear Yes
 Smallest distance between boilers and bunkers or woodwork 12"
 Diameter of boilers 16" 0" Length of boilers 17 ft description of riveting of shell long. seams Double riveted circum. seams Double
 Thickness of shell plates 1 1/8" diameter of rivet holes 1 1/8" whether punched or drilled Drilled pitch of rivets 6"
 Lap of plating Straps 16" x 1/16" per centage of strength of longitudinal joint 80% working pressure of shell by rules 92 lbs
 Size of manholes in shell 16" x 12" size of compensating rings Lozenge rings
 No. of Furnaces in each boiler Six outside diameter 4' 3" length, top 6' 9" bottom Through Furnaces
 Thickness of plates 1/8" description of joint Corrupted if rings are fitted — greatest length between rings —
 Working pressure of furnace by the rules —
 Combustion chamber plating, thickness, sides 8/16" back — top 8/16"
 Pitch of stays to ditto sides 8" x 8" back — top 9 1/4" x 8"
 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 120 lbs
 Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 93 lbs
 End plates in steam space, thickness 3/16" pitch of stays to ditto 16 1/2" x 14 1/4" how stays are secured By double nut
 Working pressure by rules 8 1/2 lbs diameter of stays at smallest part 2 1/8" working pressure by rules 8 1/2 lbs
 Front plates at bottom, thickness 1/16" Back plates, thickness — greatest pitch of stays — working pressure by rules —



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Diameter of tubes $3\frac{1}{4}$ " pitch of tubes $4\frac{1}{2}$ " thickness of tube plates, front $1\frac{1}{16}$ " back $1\frac{1}{16}$ "
 How stayed *By Tubes* pitch of stays $13\frac{1}{2} \times 13\frac{1}{2}$ " width of water spaces *about 6"*
 Diameter of Superheater ~~or steam chest~~ 11.9 " *height 10 ft*
 Thickness of plates $1\frac{1}{16}$ " description of longitudinal joint *Sebble* diameter of rivet holes $1\frac{1}{8}$ " pitch of rivets 5 "
 Working pressure of shell by rules 90 lbs Diameter of flue 8.9 " thickness of plates $1\frac{1}{16}$ "
 If stiffened with rings *Yes* distance between rings *4 ribs +* Working pressure by rules 100 lbs
 End plates of superheater, or steam chest; thickness $1\frac{1}{16}$ " How stayed *Connected to shell*
 Superheater ~~or steam chest~~; how connected to boiler *By Copper pipes*

DONKEY BOILER— Description *Round Horizontal*
 Made at *Glasgow* By whom made *Elder, Hoop* when made *1881*
 Where fixed *in Upper Deck* working pressure 90 lbs Tested by hydraulic pressure to 140 lbs No. of Certificate $4/3$
 Fire grate area 22.5 Description of safety valves *Direct Spring* No. of safety valves *Two* area of each 4 "
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *Two Stop Valves are fitted*
 Diameter of donkey boiler 4.6 " length 4.9 " description of riveting *Sebble*
 thickness of shell plates $1\frac{1}{16}$ " diameter of rivet holes $1\frac{1}{16}$ " whether punched or drilled *punched & rimmed*
 pitch of rivets $3\frac{1}{8}$ " lap of plating $6\frac{1}{2}$ " per centage of strength of joint 44%
 thickness of crown plates — stayed by —
 Diameter of furnace, top 2.6 " bottom — length of furnace 5.9 "
 thickness of plates $1\frac{1}{16}$ " description of joint *Double Straps fitted*
 thickness of furnace crown plates $1\frac{1}{16}$ " + $1\frac{1}{16}$ " bottoms stayed by —
 Working pressure of shell by rules 93 lbs working pressure of furnace by rules 98 lbs
 diameter of uptake — thickness of plates — thickness of water tubes —

The foregoing is a correct description.

John Elder & Co
J. A. D. Brown



General Remarks (State quality of workmanship, opinions as to class, &c. *The Engine & Boilers of this vessel are of good workmanship and now in good order & safe working condition and eligible in my opinion to be noted in the Register Book + Lloyd's M.C. 4.81*)

This submitted that this vessel is eligible to have the notification of Lloyd's M.C. recorded in the Register Book M. 11/4/81

The amount of Entry Fee $\pounds 3$: : : received by me.
 Special .. $\pounds 45$: : : *vs: £50.00*
 Certificate (if required) .. \pounds : : : *5th Apr 1881*
 To be sent as per margin.
 (Travelling Expenses, if any, \pounds *2.00*)

Committee's Minute *Tuesday April, 12th 1881.*
+ Lloyd's

James G. Mollison
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping
 Clyde District