

REPORT ON MACHINERY.

No. 5344

No. in Survey held at Glasgow
Reg. Book.

Date, first Survey Sept 6th 1880 Last Survey April 4th 1881

(Received in London Office 11/4/81 18)

on the Screw Steamer Drummond Castle

Tons 3704.96
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 37" No. of Rev. per minute 70 Point of Cut off, High Pressure .6 Low Pressure "
Diameter of Screw shaft 10 1/2" Diameter of Tunnel shaft 16" Diameter of Crank shaft journals 17 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" No. of blades Four detachable moveable — total surface 9 1/2
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 & 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 on steam chest Annular with Single Line
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 ft² 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 7" 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 1/2' 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 1/4" per centage of strength of longitudinal joint 85% working pressure of shell by rules 92 lbs
Size of manholes in shell 16" x 12" size of compensating rings Boyed rings
No. of Furnaces in each boiler Six outside diameter 4' 3" length, top 6' 9" bottom Through Furnaces
Thickness of plates 1 1/8" description of joint Corrugated 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 10/16" Back plates, thickness — greatest pitch of stays — working pressure by rules —

5344. gds

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~~ $11\frac{1}{2}$ " *height 10 ft*
Thickness of plates $\frac{1}{16}$ " description of longitudinal joint *Sebble* diameter of rivet holes $1\frac{1}{2}$ " pitch of rivets $5\frac{1}{2}$ "
Working pressure of shell by rules 90 lbs Diameter of flue $8\frac{1}{2}$ " thickness of plates $\frac{1}{16}$ "
If stiffened with rings *Yes* distance between rings *4 trips +* Working pressure by rules 100 lbs
End plates of superheater, or steam chest; thickness $\frac{1}{16}$ " 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 & Co* when made *1881*
Where fixed *on upper deck* working pressure 90 lbs Tested by hydraulic pressure to 140 lbs No. of Certificate $4\frac{1}{3}$
Fire grate area $22\cdot5$ Description of safety valves *Direct Spring* No. of safety valves *Two* area of each $4\frac{1}{2}$ "
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 $4\frac{1}{2}$ " length $4\frac{1}{2}$ " description of riveting *Sebble*
thickness of shell plates $\frac{1}{16}$ " diameter of rivet holes $1\frac{1}{16}$ " whether punched or drilled *punched & rimmed*
pitch of rivets $3\frac{5}{8}$ " lap of plating $6\frac{1}{2}$ " per centage of strength of joint 44%
thickness of crown plates — stayed by —
Diameter of furnace, top $2\frac{1}{2}$ " bottom — length of furnace $5\frac{1}{2}$ "
thickness of plates $\frac{1}{16}$ " description of joint *Double Straps fitted*
thickness of furnace crown plates $\frac{1}{16}$ " + $\frac{1}{16}$ " 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. Bryant



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*

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

The amount of Entry Fee $\pounds 3$: : : received by me.
Special .. $\pounds 45$: : : viz: $\pounds 50$ of *Am*
Certificate (if required) .. \pounds : : : $5\frac{1}{4}$ 1881
To be sent as per margin.
(Travelling Expenses, if any, $\pounds 2\frac{1}{2}$)

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

James Morrison
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping
Clyde District