

REPORT ON MACHINERY.

No. 193

(Received at London Office 6th NOV. 82)

No. in Survey held at Aberdeen Date, first Survey 13/12/81 Last Survey 31st October 1882
Reg. Book.

on the T.S.S. "Lady Cathcart" Tons 418.1

Master Alexander Ross Built at Aberdeen When built 1882

Engines made at Aberdeen By whom made Blairrie Bros when made 1882

Boilers made at do By whom made do when made 1882

Registered Horse Power 70 Owners Aberdeen Line Co Port belonging to Aberdeen

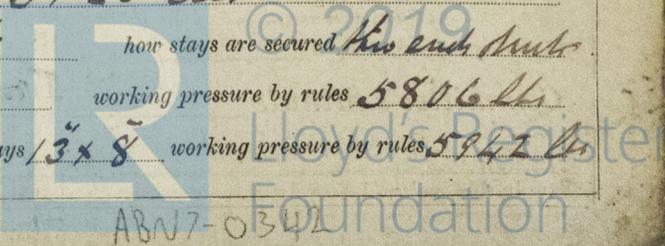
ENGINES, &c.—

Description of Engines Direct Acting Compound Int. Cyls Surface Condensing
 Diameter of Cylinders 24" & 42" Length of Stroke 30" No. of Rev. per minute 80 Point of Cut off, High Pressure 7/8 Low Pressure 7/8
 Diameter of Screw shaft 8" Diameter of Tunnel shaft 7 1/2" Diameter of Crank shaft journals 8" Diameter of Crank pin 8" size of Crank webs 9 1/2" x 5 1/2"
 Diameter of screw 11" 0" Pitch of screw 15" 9" No. of blades 4 state whether moveable Sol total surface 33.74 feet
 No. of Feed pumps one diameter of ditto 3 1/2" Stroke 15" Can one be overhauled while the other is at work —
 No. of Bilge pumps one diameter of ditto 3 1/2" Stroke 15" Can one be overhauled while the other is at work —
 Where do they pump from all compartments
 No. of Donkey Engines two ^{Balast 6" x 9" x 5"} Size of Pumps 6" x 6" x 3 1/2" Where do they pump from sea, Malwell, compartments
to boilers and on Deck (Balast) from tanks all compartments - thru ship side
 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 3 1/2" Are they connected to condenser, or to circulating pump circulating
 How are the pumps worked by levers from piston of after engine
 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 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 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 before launch 25th Sept 1882
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from top of cylinders

BOILERS, &c.—

Number of Boilers one Description Circular Tubular
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test 14th September 1882
 Description of ~~superheating apparatus~~ steam chest Horizontal Dumb
 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 49.5 feet Description of safety valves Direct Spring Load (Cockburns)
 No. to each boiler two area of each valve 12.56" 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 11"
 Diameter of boilers 12' 6" Length of boilers 10' 0" description of riveting of shell long. seams butt D.R. circum. seams lap D.R.
 Thickness of shell plates 7/8" diameter of rivet holes 1" whether punched or drilled punched pitch of rivets 4 1/4"
 Lap of plating 12" & 4 3/4" per centage of strength of longitudinal joint 76 & 76% working pressure of shell by rules 83 lbs
 Size of manholes in shell 16" x 12" size of compensating rings 4" x 3/4"
 No. of Furnaces in each boiler 3 outside diameter 35 7/8" length, top 7' 1" bottom 9' 3"
 Thickness of plates 1/2" description of joint butt S.R. if rings are fitted 1/2 angle greatest length between rings 4' 0"
 Working pressure of furnace by the rules 88 lbs
 Combustion chamber plating, thickness, sides 7/8" back 7/8" top 7/8"
 Pitch of stays to ditto sides 8" x 8" back 8" x 8" top round
 If stays are fitted with nuts or riveted heads Nuts both ends working pressure of plating by rules 84 lbs
 Diameter of stays at smallest part 1 1/2" round side 1 1/2" working pressure of ditto by rules 5/20 lbs
 End plates in steam space, thickness 3/4" pitch of stays to ditto 15" x 15" how stays are secured thru ends nuts
 Working pressure by rules 89 lbs diameter of stays at smallest part 2" working pressure by rules 58.06 lbs
 Front plates at bottom, thickness 4 1/2" Back plates, thickness 7/8" greatest pitch of stays 13" x 8" working pressure by rules 59.42 lbs

Form No. 8-7-1880



3438 Abn

Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{1}{2}$ " thickness of tube plates, front $\frac{3}{4}$ " back $\frac{3}{4}$ "
 How stayed *tubes Anti* pitch of stays $9 \times 13\frac{1}{2}$ " width of water spaces 1"
 Diameter of ~~Steam chest~~ Steam chest 3.6 length 7.9"
 Thickness of plates $\frac{7}{16}$ description of longitudinal joint *Lap D.R.* diameter of rivet holes $\frac{3}{4}$ " pitch of rivets $2\frac{1}{2}$ "
 Working pressure of shell by rules 111 lbs Diameter of flue \leftarrow thickness of plates \leftarrow
 If stiffened with rings \leftarrow distance between rings \leftarrow Working pressure by rules \leftarrow
 End plates of ~~steam chest~~ steam chest; thickness $\frac{5}{8}$ " How stayed *Dished*
~~Steam chest~~ steam chest; how connected to boiler *by two malleable necks riveted to shells*

DONKEY BOILER— Description *one Mound Vertical*
 Made at *Aberdeen* By whom made *Blairie Bros* when made 1882
 Where fixed *Stokehall* working pressure 50 lbs Tested by hydraulic pressure to 100 lbs No. of Certificate 2
 Fire grate area 14 feet Description of safety valves *D.S. Load* No. of safety valves *one* area of each $7\frac{1}{4}$ "
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*
 Diameter of donkey boiler 5.0" length 9.0" description of riveting *Lap double rivet*
 thickness of shell plates $\frac{3}{8}$ " diameter of rivet holes $\frac{3}{4}$ " whether punched or drilled *punched*
 pitch of rivets $2\frac{1}{2}$ " lap of plating $4"$ in $2\frac{1}{2}$ " per centage of strength of joint 70.95 %
 thickness of crown plates $\frac{1}{2}$ " stayed by *Dished*
 Diameter of furnace, top 4.2" bottom 4.5" length of furnace 5.0"
 thickness of plates $\frac{7}{16}$ description of joint *Lap S.R.*
 thickness of furnace crown plates $\frac{7}{16}$ stayed by *Dished*
 Working pressure of shell by rules 66 lbs working pressure of furnace by rules 65 lbs
 diameter of uptake 11" thickness of plates $\frac{5}{16}$ " thickness of water tubes $\frac{5}{16}$ "

The foregoing is a correct description,
 Manufacturer.

Blairie Brothers

General Remarks (State quality of workmanship, opinions as to class, &c. *The Boilers and Engine of this vessel have been built under special supervision and agreeable to the requirements of the Rules. Material and workmanship are of the best description. The safety valves have been tested by steam and to a working pressure of 80 lbs per square inch and the machinery seen at work and found satisfactory and in my opinion are eligible to be entered into the Register Book with the distinctive mark*
 ✱ *Lloyd's M.C. 31.10.82 in red.*

Submitted that this vessel is eligible to have the registration + L.M.C. 10.82

28/11/82

John Murray
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Dundee District

The amount of Entry Fee £ 2 : 0 : 0 received by me, *this day and forwarded to Dundee.*
 Special .. £ 10 : 10 : 0
 Certificate (if required) .. £ - : 2 : 6 *for 14 1882*
 (Travelling Expenses, if any, £ 3-14-0)

Committee's Minute *Tuesday, 7th November, 1882*