

REPORT ON MACHINERY.

No. 5123

(Received in London Office 29/6/1880)

No. in Survey held at Glasgow
Reg. Book.

Date, first Survey 11th Decr 1879 Last Survey 26th June 1880

on the

S.S. Lennox

Tons 1983
1327

Master David Scott Built at Linthouse, Glasgow When built 1880

Engines made at Linthouse, Glasgow By whom made A. Stephen & Sons, when made 1880

Boilers made at " " By whom made " " when made 1880

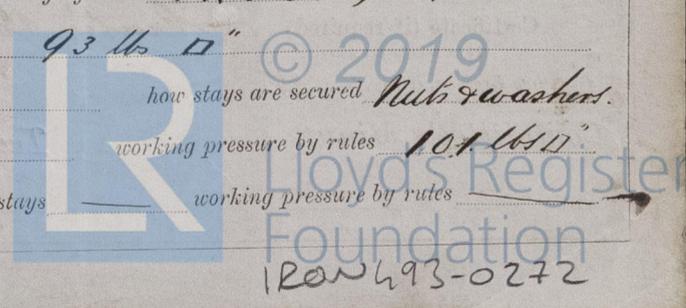
Registered Horse Power 240 Owners " " Port belonging to Leith

ENGINES, &c.—

Description of Engines Compound, Inverted, Direct acting.
 Diameter of Cylinders 38" & 68" Length of Stroke 45" No. of Rev. per minute 56 Point of Cut off, High Pressure 1/2 Low Pressure 9/16
 Diameter of Screw shaft 13" Diameter of Tunnel shaft 12 1/4" Diameter of Crank shaft journals 13" Diameter of Crank pin 13 1/2" size of Crank webs 8 1/4" & 14 1/4"
 Diameter of screw 1 7/8" Pitch of screw 20 ft No. of blades 4 state whether movable yes total surface 670 ft
 No. of Feed pumps 2 diameter of ditto 4 1/2" Stroke 28" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 diameter of ditto 4 1/2" Stroke 28" Can one be overhauled while the other is at work yes
 Where do they pump from Engine room, Stokhold & all holds.
 No. of Donkey Engines two ^{Main Donkey} ^{Ballast} Size of Pumps 8" Cyl 8" Stroke 4 1/2" pumps where do they pump from Both pumps from Engine Room bilges & through Condenser, the Donkey pumps from all holds &c.
 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 —
 No. of bilge injections one and sizes 4" Are they connected to condenser, or to circulating pump Circulating Pump.
 How are the pumps worked by levers on the column over Condenser.
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks yes 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 Steam & bilge pipes How are they protected Cased in.
 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 yes, before launching.
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from top platform.

BOILERS, &c.—

Number of Boilers two Description Iron Plate Steel
Subular, Cylindrical, double ended.
 Working Pressure 85 lbs Tested by hydraulic pressure to 170 lbs Date of test 20th May 1880.
 Description of superheating apparatus or steam chest steam chest standing fore & aft on legs forming manholes.
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately —
 No. of square feet of fire grate surface in each boiler 640 ft Description of safety valves direct Spring 3 1/2" steel, 5" c.c. 19 1/2" long.
 No. to each boiler two area of each valve 19.63 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 9" from side of Boiler to side of Bunker.
 Diameter of boilers 12'0" Length of boilers 16'0" description of riveting of shell long. seams double butt double riv. circum. seams double riveted
 Thickness of shell plates 1 1/16" diameter of rivet holes 1 3/16" whether punched or drilled drilled pitch of rivets 4 3/4"
 Lap of plating 12 1/2" butt per centage of strength of longitudinal joint 70% working pressure of shell by rules 103 lbs
 Size of manholes in shell 15 1/4" x 11 1/4" size of compensating rings 6" x 3 1/2" ring riveted on.
 No. of Furnaces in each boiler 4 outside diameter 41" diam length, top 6 ft bottom —
 Thickness of plates 1/2" description of joint double butt strap if rings are fitted no greatest length between rings —
 Working pressure of furnace by the rules 91 lbs
 Combustion chamber plating, thickness, sides 7/16" back bottom 1/2" top 7/16"
 Pitch of stays to ditto 8" x 7" on sides back, 7" x 7" Girders on top
 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 8" x 8" taken, 84 lbs.
 Diameter of stays at smallest part 1 3/8" screwed over threads working pressure of ditto by rules 93 lbs
 End plates in steam space, thickness 1 3/16" pitch of stays to ditto 15 1/4" how stays are secured Nuts & washers.
 Working pressure by rules 107 lbs diameter of stays at smallest part 2 3/8" working pressure by rules 104 lbs
 Front plates at bottom, thickness 1 3/16" Back plates, thickness — greatest pitch of stays — working pressure by rules —



Diameter of tubes $3\frac{1}{4}$ " ex. pitch of tubes $4\frac{1}{8} \times 4\frac{3}{8}$ thickness of tube plates, front $\frac{13}{16}$ " back $\frac{7}{16}$ "
 How stayed *by stay tubes* pitch of stays $1\frac{1}{4} \times 9$ " width of water spaces $3\frac{1}{2}$ " narrowest
 Diameter of Superheater or Steam chest 30 " length $13-6$ " 26945 Iron
 Thickness of plates $\frac{7}{16}$ " description of longitudinal joint *double rivet* diameter of rivet holes $\frac{3}{4}$ " pitch of rivets $2\frac{1}{2}$ "
 Working pressure of shell by rules $158\text{ lbs } 0$ " 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 $\frac{1}{2}$ " How stayed *one stay, 1\frac{1}{2}" dia at body.*
 Superheater or steam chest; how connected to boiler *two manhole tubes, 7\frac{1}{8}" thick*
 Description *Inner Plates Steel Oval Tubular*
DONKEY BOILER—
 Made at *Linthwaite, Glasgow* By whom made *A. Stephen & Sons* when made *1880*
 Where fixed *Upper deck* working pressure $50\text{ lbs } 0$ " Tested by hydraulic pressure to $100\text{ lbs } 0$ " No. of Certificate *312*
 Fire grate area 10.5 sq ft Description of safety valves *10\frac{1}{2}" long* *Wicket Spring 7/16"* No. of safety valves *2* area of each 7.0 sq ft
 If fitted with easing gear *no* If steam from main boilers can enter the donkey boiler *no*
 Diameter of donkey boiler $5-6 \times 9-6$ " length $7-6$ " description of riveting *lap joint double riveted*
 thickness of shell plates $\frac{7}{16}$ " diameter of rivet holes $\frac{3}{4}$ " whether punched or drilled *punched*
 pitch of rivets $2\frac{1}{2}$ " lap of plating $1\frac{1}{2}$ " per centage of strength of joint $70\text{ } 70$
 thickness of crown plates — stayed by —
 Diameter of furnace, top 37 " bottom — length of furnace $5-0$ "
 thickness of plates $\frac{3}{8}$ " description of joint *double butt chaps*
 thickness of furnace crown plates — stayed by —
 Working pressure of shell by rules 72 lbs working pressure of furnace by rules 68 lbs
 diameter of uptake — thickness of plates — thickness of water tubes —

The foregoing is a correct description,
 Manufacturer. *Alex Stephen & Sons*

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

The Engines & Boilers are now in good order & safe working condition, & eligible in my opinion to be classed in the Register Book & Lloyds M.C.

*This submitted that this vessel is eligible to have the modification for stay to be recorded in the Register Book
 M 29/6/80*

[Large blue ink scribble]

The amount of Entry Fee £ 3 : : : received by me.
 Special £ 32 : : :
 Certificate (if required) .. £ *Gratis June 1880*
 To be sent as per margin.
 (Travelling Expenses, if any, £)

A. B. T. T.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute Tuesday, June, 29th, 1880.

