

# REPORT ON MACHINERY.

15654

Port of Sunderland

BOX CASE

WED 17 SEPT 1890

To. 15654

No. in Survey held at Sunderland

Date, first Survey 10th March

Last Survey 20th August 1890

Reg. Book.

(Number of Visits 20)

Tons 1045  
1668

on the S.S. "Lynton"

Master G. Balline Built at Sunderland By whom built J. Blumer & Co

When built 1890

Engines made at Sunderland By whom made George Clark L<sup>d</sup>

when made 1890

Wheels made at Sunderland By whom made George Clark L<sup>d</sup>

when made 1890

Indicated Horse Power 150  
134

Owners John Holman & Sons

Port belonging to London

## DETAILS, &c.—

Description of Engines Triple compound, three cranks, three cylinders

Number of Cylinders 18 1/2, 30, 49 Length of Stroke 33" No. of Rev. per minute 60 Point of Cut off, High Pressure 1/2 stroke Low Pressure 1/2 stroke

Diameter of Screw shaft 9 1/4" Diam. of Tunnel shaft 8 3/8" Diam. of Crank shaft journals 9 1/4" Diam. of Crank pin 9 1/4" size of Crank webs 18" x 6 1/2"

Diameter of screw 12-6 Pitch of screw 13-9 No. of blades 4 state whether moreable not total surface 54 sq ft

No. of Feed pumps 2 diameter of ditto 2 3/4" Stroke 19" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 diameter of ditto 3" Stroke 19" Can one be overhauled while the other is at work yes

Where do they pump from bilges of all compartments, after well & tanks

No. of Donkey Engines 2 Size of Pumps 3 1/2 x 5" & 8" x 10" Where do they pump from Tanks, bilges, sea & wells

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 4" Are they connected to condenser, or to circulating pump circulating pump

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 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 New Vessel

Is the screw shaft tunnel watertight — and fitted with a sluice door yes worked from top platform

## BOILERS, &c.—

Number of Boilers 2 Description Ordinary marine type Whether Steel or Iron Steel Letter S.

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 19-4-90

Description of superheating apparatus or steam chest none

Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately no superheater

Area of square feet of fire grate surface in each boiler 33 sq ft Description of safety valves direct spring No. to each boiler 2

Area of each valve 5.9 sq ft 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 14" Diameter of boilers 10-10"

Length of boilers 9-10 1/2" description of riveting of shell long. seams treble riv<sup>d</sup> butt straps seams double riv<sup>d</sup> lap Thickness of shell plates 31"  
32"

Diameter of rivet holes 1 5/32" whether punched or drilled drilled pitch of rivets 4 1/2" & 3 3/4" Lap of plating 1 1/4" straps

Percentage of strength of longitudinal joint 84.5% working pressure of shell by rules 160 lbs size of manholes in shell 16" x 13"

Size of compensating rings 8 3/4" x 1 7/16" No. of Furnaces in each boiler 2 Furnaces patented

Outside diameter 3-1 3/8" length, top 6 feet bottom — thickness of plates 9/16" description of joint welded if rings are fitted no

Greatest length between rings — working pressure of furnace by the rules 189 lbs combustion chamber plating, thickness, sides 9/16" back 9/16" top 9/16"

Pitch of stays to ditto, sides 4 3/4" x 4 3/4" back 4 3/4" x 4 3/4" top — stays are fitted with nuts or riveted heads nuts working pressure of plating by

rules 162 lbs Diameter of stays at smallest part 1 1/2" dia working pressure of ditto by rules 146 lbs end plates in steam space, thickness 1"

Pitch of stays to ditto 15 1/4" x 15" how stays are secured nuts working pressure by rules 165 lbs diameter of stays at

smallest part 2 1/4" working pressure by rules 160 lbs Front plates at bottom, thickness 11/16" Back plates, thickness 3/4"

Greatest pitch of stays 11" working pressure by rules 160 lbs Diameter of tubes 3 3/4" pitch of tubes 4 1/2" thickness of tube

plates, front 1" back 3/4" how stayed stay tubes pitch of stays 9" width of water spaces 1 1/4"

Diameter of Superheater or Steam chest none 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 —

Total heating surface 1986 sq ft Superheater or steam chest; how connected to boiler —

**2 DONKEY BOILERS.** Description *Vertical with two cross water tubes*  
 Made at *Stockton* by whom made *J Sudron & Co* when made *1890* where fixed *Stoke hole*  
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *1065* fire grate area *12 1/2 sq* description of safety  
 valves *Spring* No. of safety valves *1* to each boiler area of each *1.06* if fitted with easing gear *Yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *5-0"* length *10-6"* description of riveting *long lap double rivet*  
 Thickness of shell plates *1/16"* diameter of rivet holes *13/16"* whether punched or drilled *punched* pitch of rivets *2 3/4"* lap of plating *4 1/2"*  
 per centage of strength of joint *70-40%* thickness of crown plates *1/16"* stayed by *5 stays 1 1/2" eff. dia*  
 Diameter of furnace, top *3-7 1/2"* bottom *4-5"* length of furnace *4-25 1/2"* thickness of plates *1/16"* description of joint *lap single rivet*  
 Thickness of furnace crown plates *1/2"* stayed by *same as shell crown plate* working pressure of shell by rules  
 Working pressure of furnace by rules *78.4 lbs* diameter of uptake *11"* thickness of plates *3/8"* thickness of water tubes *3/8"*

**SPARE GEAR.** State the articles supplied:— *Top and bottom end connecting rod bolts & nuts, two one  
 bearing bolts & nuts, one set of coupling bolts and nuts, feed & bilge pump valves  
 bolts, nuts & iron assorted, propeller.*

The foregoing is a correct description,

FOR GEORGE CLARK LIMITED.

*George Clark & Co* Manufacturer of main engines & boilers

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

*The main steam pipes were tested by hydraulic pressure to 320 lbs.  
 The machinery has been constructed under special survey. The  
 material and workmanship are good and efficient and the engine  
 when tried under steam worked satisfactorily  
 In my opinion the machinery of this vessel is in good order and safe  
 working condition and eligible for the notification in the Register  
 Book of L.M.C. 9-90*

Machinery Certificate  
 Written.

*It is submitted that this vessel  
 is eligible to have + L.M.C. 9-90*

*18-9*

The amount of Entry Fee . . . £ 2 : 0 : - received by me.

Special . . . . . £ 20 : 2 : -

Donkey Boiler Fee . . . . . £ . . . . .

Certificate (if required) . . . £ . . . . . *16 Sept 1890.*

(Travelling Expenses, if any, £ . . . . .)

Committee's Minute

FRI 19 SEPT 1890

*+ L.M.C. 9-90*

*J. J. Findlay*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Steamships



Lloyd's Register  
 Foundation