

# REPORT ON MACHINERY.

No. 332

No. in Survey held at

Stockton

Date, first Survey

March 10<sup>th</sup>

Last Survey

July 20<sup>th</sup> 1880

on the

S. S. Lygon English

Master

Johnnam

Built at

Whitby

When built

1880

Engines made at

Stockton

By whom made

W. & A. R. L.

when made 1880

Boilers made at

Do

By whom made

Do

when made Do

Registered Horse Power

150

Owners

Geo. Pyonam & Co

Port belonging to

West Hartlepool

## ENGINES, &c.—

Description of Engines

Compound, Inverted, Surface Condensing

Diameter of Cylinders

33" & 62"

Length of Stroke

39"

No. of Rev. per minute

65

Point of Cut off, High Press

1/2 stroke

Low Press 1/2 stroke

Diameter of Screw shaft

11 3/4"

Diameter of Tunnel shaft

10 1/2"

Diameter of Crank shaft journals

11 1/4"

Diameter of Crank pin

11 3/4"

size of Crank web 5 1/2" x 8"

Diameter of screw

15.0

Pitch of screw

16.0"

No. of blades

Four

state whether moveable

No

total surface Not ascertained

No. of Feed pumps

Two

diameter of ditto

4"

Stroke

28"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

diameter of ditto

4"

Stroke

28"

Can one be overhauled while the other is at work

Yes

Where do they pump from

One pump draws from tanks, engine room, fore hold, after well, other pump from engine room

No. of Donkey Engines

Two

Size of Pumps

1 1/2" dia x 9" stroke

Where do they pump from

Large donkey draws from engine room, fore hold, after well, & ballast tanks. Small donkey from sea, fore hold, ballast tanks & engine room

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

6"

Are they connected to condenser, or to circulating pump

Circulating Pump

How are the pumps worked

By hand worked from cross head on low pressure piston rod

Are all connections with the sea direct on the skin of the ship

Yes

Are they Valves or Cocks

Valves & Cocks

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

Below

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

By

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

Is the screw shaft tunnel watertight

Yes

and fitted with a sluice door

Yes

worked from Top platform in engine room

## BOILERS, &c.—

No. of Boilers

Two

Description

Cylindrical Multitubular

Working Pressure

80 lbs

Tested by hydraulic pressure to

160 lbs

Date of test

26.6.80

Description of superheating apparatus on steam chest

Vertical Steam dome. Contracted at neck

Can each boiler be worked separately

Yes

Can the superheater be shut off and the boiler worked separately

No

Superheater

No. of square feet of fire grate surface in each boiler

36.6

Description of safety valves

Spring. Made by W. & A. R. L.

No. to each boiler

Two

area of each valve

11.04 sq in

Are they fitted with easing gear

Yes

No. of safety valves to superheater

Two

area of each valve

Two

are they fitted with easing gear

Yes

Smallest distance between boilers and bunkers or woodwork

8"

Diameter of boilers

12.11 3/8"

Length of boilers

10.3"

Description of riveting of shell long. sec

Double

Thickness of shell plates

1 1/16"

diameter of rivet holes

1 1/8"

whether punched or drilled Drilled pitch of rivets 3 15/16" in long seams

Lap of plating

Double straps 10 1/2" long

percentage of strength of longitudinal joint

71.4

working pressure of shell by rules 94.8 lbs

Size of manholes in shell

15 1/2" x 11 1/2"

size of compensating rings

Rectangular plate 28" x 24" x 1 1/8"

No. of Furnaces in each boiler

Three

outside diameter

3.1 1/2"

length, top

6.3"

bottom

9"

Thickness of plates

1 1/2" top 9/16" bottom

Description of joint

Double straps Single

Are rings are fitted

No

greatest length between rings

—

Working pressure of furnace by the rules

Top 95 lbs Bottom 84 lbs

Combustion chamber plating, thickness, sides

1/2"

back

1/2"

top

1/2"

Pitch of stays to ditto

sides

8 x 8

back

8 x 4 1/2"

top

Curved top

If stays are fitted with nuts or riveted heads

Partly with nuts partly riveted

Working pressure of plating by rules

100 lbs

Diameter of stays at smallest part

1 3/16"

Working pressure of ditto by rules

126 lbs

End plates in steam space, thickness

1/2"

pitch of stays to ditto

16 1/2" x 16"

How stays are secured

By nuts & washers

Working pressure by rules

100.7

diameter of stays at smallest part

2 3/8"

Working pressure by rules

100.6

Front plates at bottom, thickness

1/2"

Back plates, thickness

1/2"

greatest pitch of stays

12 x 1/2"

Working pressure by rules

90 lbs

IRON 444-0027



Diameter of tubes  $3\frac{1}{4}$  ex. pitch of tubes  $4\frac{1}{2} \times 4\frac{5}{8}$  thickness of tube plates, front  $\frac{1}{8}$  back  $\frac{1}{8}$   
 How stayed *Lap tubes* pitch of stays  $13\frac{1}{2} \times 9\frac{1}{4}$  width of water spaces *Smallest space  $4\frac{1}{2}$  between furnaces*  
 Diameter of ~~Superheater or Steam chest~~ *Donk*  $3\frac{1}{4}$  length  $5\frac{1}{2}$   
 Thickness of plates  $\frac{1}{2}$  description of longitudinal joint *Lap double riveted* Diameter of rivet holes  $\frac{13}{16}$  pitch of rivets  $3\frac{1}{8}$   
 Working pressure of shell by rules  $126.8$  lbs Diameter of flue " thickness of plates "  
 If stiffened with rings " distance between rings " Working pressure by rules " *27305 ton*  
 End plates of ~~superheater or steam chest~~ *Donk* thickness  $\frac{1}{2}$  How stayed *Four stays  $2\frac{1}{8}$  dia*  
 Superheater or steam chest; how connected to boiler *By flanged pipe  $16$  dia  $\times \frac{1}{8}$  thick. Double riveted to shell*  
**DONKEY BOILER—** Description *Vertical water tubes in furnace*  
 Made at *Stockton* By whom made *Wiley Pers.* when made *June 1880. Vested 19.6.80*  
 Where fixed *In stockhold* working pressure  $40$  lbs Tested by hydraulic pressure to  $140$  lbs No. of Certificate *349*  
 Fire grate area  $20.5$  Description of safety valves *Direct lift* No. of safety valves *One of each* area of each  $5.47$   
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*  
 Diameter of donkey boiler  $6.0$  length  $13.0$  description of riveting *Long seams. Lap double*  
 thickness of shell plates  $\frac{1}{2}$  diameter of rivet holes  $\frac{3}{4}$  full whether punched or drilled *Punches*  
 pitch of rivets  $2\frac{1}{2}$  lap of plating  $14\frac{1}{4}$  per centage of strength of joint  $40$   
 thickness of crown plates  $\frac{1}{2}$  stayed by *Six stays  $1\frac{1}{2}$  dia*  
 Diameter of furnace, top  $4.11$  bottom  $5.5$  length of furnace  $5.2$   
 thickness of plates  $\frac{1}{32}$  description of joint *Lap single riveted*  
 thickness of furnace crown plates  $\frac{1}{2}$  stayed by *Six stays  $1\frac{1}{2}$  dia*  
 Working pressure of shell by rules  $75.3$  lbs working pressure of furnace by rules  $76.6$  lbs  
 diameter of uptake  $14$  thickness of plates  $\frac{3}{8}$  thickness of water tubes  $\frac{1}{16}$

The foregoing is a correct description,

*Robt Blair & Co. Ltd*  
*247 Blair*

Manufacturers of Engines & Marine Boilers only

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

*Material & Workmanship Good*  
*The Machinery & Boilers of this vessel are in good*  
*order and safe working condition and are in every way eligible*  
*for the Notification  $\times$  Lloyd's M.C. in the Register Book*

*Yli. Machinery of this vessel*  
*has been built and fitted under*  
*special survey & submitted that*  
*it is eligible to have  $\times$  Lloyd's*  
*M.C. 7.00*  
*M 26.7.80*

The amount of Entry Fee .. £ 3 : : : received by me,

Special .. £ 22 : 10 : :

Certificate (if required) .. £ : : 5 : : 14.7.1880.

To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

Tuesday, July, 27th, 1880.

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.