

## REPORT ON MACHINERY.

No. 47661.

Port of Newcastle

Received at London Office

JULY 27 SEP 1904

No. in Survey held at NewcastleDate, first Survey May 16Last Survey 20 Sep

1904

Reg. Book.

on the

S/S Cayo Manzanillo(Number of Visits 31)

Master

Wintee

Built at

Newcastle

By whom built

Armstrong Whit 16°Tons Gross 3001Net 1909When built 1904

Engines made at

Newcastle

By whom made

R & M. Engle & Co.when made 1904

Boilers made at

"

By whom made

"when made 1904

Registered Horse Power

Owners

C. Bigland & Co.

Port belonging to

London

Nom. Horse Power as per Section 28

328

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

no

## ENGINES, &amp;c.—Description of Engines

In C.P.D.

No. of Cylinders

3No. of Cranks 3

Dia. of Cylinders

24.5 40.66

Length of Stroke

45

Revs. per minute

65

Dia. of Screw shaft

13.8

Material of

Iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

yes

Is the after end of the liner made water tight

in the propeller boss yes If the liner is in more than one length are the joints burned✓

If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

✓

liners are fitted, is the shaft lapped or protected between the liners

✓

Length of stern bush

5' 3"

Dia. of Tunnel shaft

as per rule 13.2

Dia. of Crank shaft journals

as per rule 12.8

Dia. of Crank pin

1' 1"

Size of Crank webs

252 x 8

Dia. of thrust shaft under

collars

1' 1"

Dia. of screw

16' 6"

Pitch of screw

16' 6"

No. of blades

4

State whether moveable

f

Total surface

No. of Feed pumps

2

Diameter of ditto

4"

Stroke

1' 10"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

4"

Stroke

1' 10"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

3

SIZES OF PUMPS

9" 11" 10" 7" 2" 5" 6" 4" 4" 2" 4"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

4 of 3"In Holds, &c. 2 of 3" in all holds

No. of bilge injections

1

sizes

5"

Connected to condenser, or to circulating pump

C.P.

Is a separate donkey suction fitted in Engine room &amp; size

yes

Are all the bilge suction pipes fitted with roses

yes

Are the roses in Engine room always accessible

yes

Are the sluices on Engine room bulkheads always accessible

✓

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

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

What pipes are carried through the bunkers

none

How are they protected

✓

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

yes

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

new vessel

Is it fitted with a watertight door

yes

worked from

top platform

## BOILERS, &amp;c.—

(Letter for record

R.)

Total Heating Surface of Boilers

5210 sq.

Is forced draft fitted

no

No. and Description of Boilers

2 Marine type S.C.

Working Pressure

180 lb

Tested by hydraulic pressure to

360 lb

Date of test

30.7.04

Can each boiler be worked separately

yes

Area of fire grate in each boiler

48 sq.

No. and Description of safety valves to

each boiler

2 Spring

Area of each valve

8.03

Pressure to which they are adjusted

185 lb

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

20"

Mean dia. of boilers

16' 4 1/2"

Length

10' 6"

Thickness

1 1/2"

Range of tensile strength

32

Are they welded or flanged

endsDescrip. of riveting: cir. seams dr. lap long. seams t.r. & butt

Diameter of rivet holes in long. seams

1 3/4"

Pitch of rivets

10"

Lap of plates or width of butt straps

22 1/2"

Per centages of strength of longitudinal joint

91

rivets

84

Working pressure of shell by rules

215 lb

Size of manhole in shell

16' x 12"

Size of compensating ring

flanged

No. and Description of Furnaces in each boiler

4 Doughts

Material

S.

Outside diameter

Length of plain part

top

Thicknes

3 1/2"

of plates

bottom

Description of longitudinal joint

weld

No. of strengthening rings

✓

Working pressure of furnace by the rules

198 lb

Combustion chamber plates: Material

S.

Thickness: Sides

3 1/2"

Back

3 1/2"

Top

3 1/2"

Bottom

Pitch of stays to ditto: Sides

8 1/2' x 10"

Back

8 1/2' x 8 1/2"

Top

8 1/2' x 10"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

Material of stays

Iron

Diameter at smallest part

1.6"

Area supported by each stay

870

Working pressure by rules

193 lb

End plates in steam space:

Material

S.

Thickness

1 1/2"

Pitch of stays

1 1/2' x 21"

How are stays secured

dr. nuts

Working pressure by rules

289 lb

Material of stays

S.

Diameter

at smallest part7 1/4"

Area supported by each stay

3580

Working pressure by rules

201

Material of Front plates at bottom

Thickness

1"

Material of Lower back plate

S.

Thickness

3 1/2"

Greatest pitch of stays

14 1/2"

Working pressure of plate by rules

230 lb

Diameter of tubes

3 1/2"

Pitch of tubes

4 1/2' x 4 3/8"

Material of tube plates

S.

Pitch across wide water spaces

14 1/2"

Working pressures by rules

200 lb

Girders to Chamber tops: Material

S.

Depth and

thickness of girder at centre8 1/2' x 1 1/2"

Length as per rule

30"

Distance apart

8 1/2"

Number and pitch of Stays in each

2 of 10

Working pressure by rules

201 lb

Superheater or Steam chest; how connected to boiler

—

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

If stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear



DONKEY BOILER— No. 1 Description *Marine Type*  
Made at *Newcastle* By whom made *H. G. In 1860* When made *1904* Where fixed *Main deck*  
Working pressure *100 lb* tested by hydraulic pressure to *200 lb* No. of Certificate *6830* Fire grate area *25 sq ft* Description of safety valves *2 Spring*  
No. of safety valves *2* Area of each *4' 9"* Pressure to which they are adjusted *105 lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *9 ft* Length *9 ft* Material of shell plates *8* Thickness *7/8* Range of tensile strength *32* Descrip. of riveting long. seams *Lap & rivd.* Dia. of rivet holes *1 1/8* Whether punched or drilled *8* Pitch of rivets *3 1/8*  
Lap of plating *6 1/2* Per centage of strength of joint *67* Rivets *67* Thickness of shell *7/8* Radius of do. *—* No. of Stays to do. *6*  
Dia. of stays *2 1/8* Diameter of furnace Top *33"* Bottom *—* Length of furnace *5' 4"* Thickness of furnace plates *5"* Description of joint *held.* Thickness of furnace crown plates *9/16* Stayed by *12 iron stays @ 10 1/2 x 9 1/2* Working pressure of shell by rules *102 1/2*  
Working pressure of furnace by rules *112 1/2* Diameter of uptake *3 1/2* Thickness of uptake plates *5/8 + 0 1/8* Thickness of water tubes *Sly 7/16*

SPARE GEAR. State the articles supplied:— *1 set connecting rod bolts & nuts*  
*2 main bearing bolts & nuts. 1 set coupling bolts*  
*and nuts. 1 set feed and bilge pump valves*  
*propeller and shaft. nuts bolts and iron*

The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD.

Manufacturer.

*Manufactured by Main Engineer Main & Donkey Boilers*

*J. Harrison*  
Dates of Survey while building { During progress of work in shops— *1904 May 16 June 9 12 14 15 17 20 21 30 July 6 7 8 11 12 15 16 30 22 23 25 27 Aug 12 18 19*  
During erection on board vessel *20 23 24 25 31 Sep 6 20*  
Total No. of visits *31*

Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " " *Yes*

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

*Machinery and boilers*

*constructed under special survey. Materials and work-*  
*manship good and efficient. Engines and boilers examined*  
*under steam & found satisfactory. In my opinion*  
*this vessel is now eligible for the record of L.M.C 9/04*  
*in the Register Book.*

*It is submitted that*  
*this vessel is eligible for*  
*THE RECORD. L.M.C. 9.04*

*Bab.*  
*27.9.04*

*27.9.04*

The amount of Entry Fee. £ *3* : :  
Special £ *36.8* : :  
Donkey Boiler Fee £ : :  
Travelling Expenses (if any) £ : :  
When applied for, *26 SEP 1904*  
When received, *1/10/04*

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

Committee's Minute

*FRI. 30 SEP 1904*

MARINE CERTIFICATE  
WRITTEN.

Assigned

*+ L.M.C. 9.04*