

REPORT ON MACHINERY.

No. 6844

FRIDAY 13 MARCH 1885

No. in Survey held at

Glasgow

Date, first Survey

5th Sept 1884

Received at London Office

Last Survey 11th March 1885

Reg. Book.

on the

Screw Steamer "Electra"

(Number of Visits 147)

1219

Tons 420

Master

Paterson

Built at

Glasgow

By whom built

R. Napier & Sons

When built 1884-5

Engines made at

Glasgow

By whom made

when made 1884-5

Boilers made at

"

By whom made

when made 1884-5

Registered Horse Power

200

Owners

Eastern Telegraph Co. (Limited)

Port belonging to

London

ENGINES, &c.—

Description of Engines

Compound Inverted Direct Acting

Diameter of Cylinders

32" + 64"

Length of Stroke

42"

No. of Rev. per minute

48

Point of Cut off, High Pressure

1/2

Low Pressure

1/4

Diameter of Screw shaft

10 1/2"

Diam. of Tunnel shaft

10 1/2"

Diam. of Crank shaft journals

11 1/2"

Diam. of Crank pin

11 1/2"

size of Crank webs

15 3/4" x 7 1/4"

Diameter of screw

1 1/2"

Pitch of screw

2 1/2"

No. of blades

four

state whether moveable

Yes

total surface

60.7 sq. ft.

No. of Feed pumps

Two

diameter of ditto

3 1/2"

Stroke

22"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

diameter of ditto

4"

Stroke

22"

Can one be overhauled while the other is at work

Yes

Where do they pump from

All compartments

No. of Donkey Engines

Two

Size of Pumps

8" x 4 1/2" x 8"

Where do they pump from

From Sea & Hotwell

Centrifugal pump 6"

Are the bilge suction pipes fitted with roses

Yes

Are the roses always accessible

Yes

Are the sluices on Engine room bulkheads always accessible

Yes

Bilge injections

Two

and sizes

8" x 5"

Are they connected to condenser, or to circulating pump

To both & also a connection

the pumps worked

By Levers

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

near to

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

Are the pipes carried through the bunkers

Bilge & Ballast pipes

How are they protected

By wood casing

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

On Slip previous to being launched

Is the screw shaft tunnel watertight

Yes

and fitted with a sluice door

Yes

worked from

Upper platform

BOILERS, &c.—

No. of Boilers

Two

Description

Round Horizontal

Whether Steel or Iron

Steel

Pressure

85 lbs

Tested by hydraulic pressure to

140 lbs

Date of test

19th Decr 1884

Is there a superheating apparatus or steam chest

None

Can each boiler be worked separately

Yes

Can the superheater be shut off and the boiler worked separately

Yes

Net square feet of fire grate surface in each boiler

58.5 sq. ft.

Description of safety valves

Direct Spring

No. to each boiler

Two

Area of each valve

15.9 sq. in.

Are they fitted with easing gear

Yes

No. of safety valves to superheater

None

area of each valve

Are they fitted with easing gear

Yes

Smallest distance between boilers and bunkers or woodwork

about 4"

Diameter of boilers

13' 3"

Thickness of shell plates

3/4"

description of riveting of shell long. seams

Double lap

circum. seams

Double

Thickness of shell plates

3/4"

Diameter of rivet holes

1"

whether punched or drilled

Drilled

pitch of rivets

1 1/8" + 2 1/16"

Lap of plating

4 1/2"

Working pressure of longitudinal joint

80

working pressure of shell by rules

85 lbs

size of manholes in shell

16" x 12"

Compensating rings

1 1/16 doubling

No. of Furnaces in each boiler

Three

Inside diameter

3' 3"

length, top

4' 7 1/2"

thickness of plates

9/16"

description of joint

Corrupted

Greatest length between rings

None

working pressure of furnace by the rules

100 lbs

combustion chamber plating, thickness, sides

9/16"

Pitch of stays to ditto, sides

7 1/2" x 7 1/2"

back

10 3/8" x 10 3/8"

top

11 1/2"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure of plating by rules

86 lbs

Diameter of stays at smallest part

1 1/8"

working pressure of ditto by rules

85 lbs

plates in steam space, thickness

1 1/16"

Pitch of stays to ditto

16 1/4" x 15 1/4"

how stays are secured

by double nuts

working pressure by rules

103 lbs

diameter of stays at

smallest part

1.91"

Greatest pitch of stays

11 1/2"

working pressure by rules

None

Diameter of tubes

3"

pitch of tubes

4' 8"

thickness of tube

plates, front

12 1/16"

back

1 1/16"

how stayed

by tubes

pitch of stays

8 1/2" x 12 1/2"

width of water spaces

5"

Diameter of Superheater or Steam chest

None

length

None

thickness of plates

None

description of longitudinal joint

None

Pitch of rivets

None

working pressure of shell by rules

None

diameter of flue

None

thickness of plates

None

If stiffened with rings

None

Distance between rings

None

working pressure by rules

None

end plates of superheater, or steam chest; thickness

None

how stayed

None

Superheater or steam chest; how connected to boiler

None

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Lloyd's Register
Foundation

6877 gls

DONKEY BOILER— Description *Round Horizontal*
Made at *Glasgow* by whom made *R. Napier & Sons* when made *1884* where fixed *Upper deck*
Working pressure *85 lbs* tested by hydraulic pressure to *140 lbs* No. of Certificate *1516* fire grate area *10 1/2* description of sq
valves *Direct Spring* No. of safety valves *one* area of each *8.29* if fitted with easing gear *yes* if steam from main boilers
enter the donkey boiler *no* diameter of donkey boiler *8 ft* length *4 1/2* description of riveting *Double riveted*
Thickens of shell plates *3/16* full diameter of rivet holes *3/8* whether punched or drilled *Drilled* pitch of rivets *3 1/2* lap of plating *6*
per centage of strength of joint *75%* thickness of ~~plates~~ *Chambers* *3/16* stayed by *Screw Stays 10 3/8 x 10 3/8* pitch
Diameter of furnace, ~~top~~ *3'-9"* ~~bottom~~ length of furnace *5 ft* thickness of plates *3/16* description of joint *Double butt*
Thickens of ~~furnace crown~~ *plates* *1 1/16* stayed by *Bar Stays 2 1/2" dia 16" x 14" pitch* working pressure of shell by rules *81*
Working pressure of furnace by rules *99 lbs* diameter of uptake *—* thickness of plates *—* thickness of ~~water~~ *tubes* *3/16*

SPARE GEAR. State the articles supplied:— *One half length Crank Shaft & Propeller blades & 1*
Studs, 1 pair top & 1 pair bottom connecting rod brasses, 1 pair main brass
2 main bearing bolts 12 coupling bolts, 4 connecting rod bolts, 2 sets of valves,
all the pumps with seats for feed pumps large assortment of bolts, nuts, &c
Boiler & Condenser, tubes &c
The foregoing is a correct description,
M. Napier & Sons Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *These Engines & Boilers are*
good workmanship and materials and are now in good order
safe working condition & eligible in my opinion to be noted in
Register Book Lloyd's M.C. 3/85

I have submitted that this
engine is eligible to have
the registration & M.C.
recorded
11/3/85

The amount of Entry Fee .. £ *2* : - : - received by me,
Special .. £ *30* : - : -
Donkey Boiler Fee .. £ : - : -
Certificate (if required) .. £ : - : - *11/3/1885*
To be sent as per margin.

(Travelling Expenses, if any, £ *8/-*)
Committee's Minute
FRIDAY 13 MARCH 1885
J. M. L.

James Mollison
Engineer Surveyor to Lloyd's Register of British & Foreign Ships
Clyde District
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